

RESOURCE ALLOCATION REVIEW



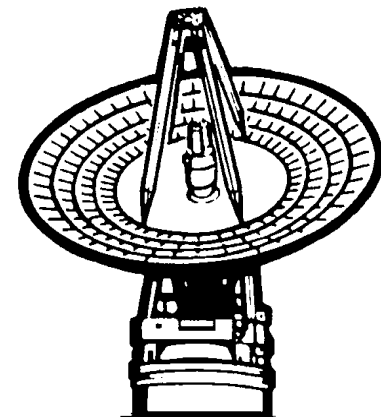
Interplanetary Network Customer Forum

Version 2.0 Final

2007 - 2009

Elsa Martinez

August 17, 2006



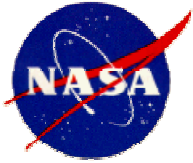


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Agenda

- ◆ **Loading Study**
- ◆ **Periods of Contention**
- ◆ **Events, Recommendations, and Analyses**

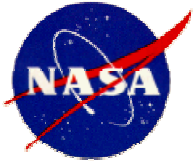


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- ◆ **Assumptions**
- ◆ **Project Changes and Changes in DSN Resource Support Request**
- ◆ **New Projects**
- ◆ **Deleted Projects**
- ◆ **DSN User / Mission Planning Set**
 - Ongoing / Approved Projects
 - Advanced / Planning Projects
- ◆ **Major DSN Downtimes by Date**
- ◆ **IND Resource Implementation Planning Matrix**

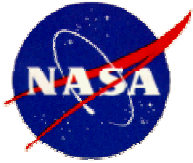


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Assumptions

- ◆ **DSS-16 is scheduled for an indeterminate downtime beginning February 1, 2006. The previous designation of 26M meaning DSS-16,46,66 will now equate to DSS-46,66. All nominal support previously assigned to DSS-16 has been reassigned to DSS-27 or DSS-24. DSS-16 will provide committed support for launches and special activities after February 1, 2006. As of September 29, 2008 DSS-46 and DSS-66 are scheduled to be taken down for an indeterminate length of time.**
- ◆ **The following Project/User requirements were not considered during the analysis process and will be negotiated during the Mid-Range Scheduling Process:**
 - **ATOT – Development (4 - 8 hour supports); Mission (8 hour supports)**
 - **DSN - (Antenna and ZDD Calibrations)**
 - **GBRA - Guest Observations (4 – 8 hour supports); PRA-GAVT (all supports); Host Country 4 – 8 hour supports**
 - **GSSR - (GODR supports at DSS-14/15)**
 - **MER 1 & 2 - Uplink and Downlink MSPA passes**
 - **RFC - Clock Sync and CAT M&E S/X and X/Ka-band VLBI**
 - **Space Geodesy Programme**



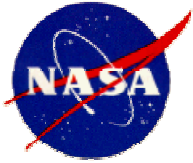
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Project Changes Since February 2006



- ◆ **Chandrayaan-1**
 - New mission added to Advanced mission set
 - Launch date 03/01/2008
 - End of prime mission 03/01/2010
- ◆ **DAWN**
 - Launch date changed from 12/17/2006 to (Not Earlier Than?) 06/20/2007
 - End of prime mission changed from 12/31/2015 to 07/4/2015
- ◆ **Ground Based Radio Astronomy (GBRA)**
 - 2007 through 2020: added 14 hour support as Host Country on DSS-34 in weeks 13,27,40,52; added 8 hour support for Host Country on DSS-34 in weeks 02, 07, 12, 18,22,25,29,33,37,43,47,50
- ◆ **Goldstone Solar System Radar (GSSR)**
 - Added 6 hour support on DSS-14 from 01/01/2013 through 01/14/2013
- ◆ **Kepler (KEPL)**
 - Launch date scheduled for 11/01/2008
 - End of prime mission changed from 06/30/2012 to 12/01/2012



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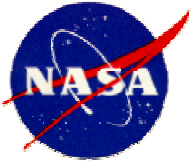
Project Changes Since February 2006



- ◆ **Lunar Crater Observation and Sensing Satellite (LCROSS)**
 - New mission added to Ongoing/Planned mission set
 - Launch date 10/31/2008
 - End of prime mission 01/31/2009

- ◆ **Lunar Reconnaissance Orbiter (LRO)**
 - New mission added to Ongoing/Planned mission set
 - Launch date 10/31/2008
 - End of prime mission 09/31/2010

- ◆ **Messenger (MSG)**
 - 2007: Added 12 passes for Venus Flyby-2 on 70M in week 23; added 2 passes per week for TCM on 70M in weeks 04,18,22,24,51; added 2 passes for DSM-2 on 70M in week 42; added 4 passes for Cruise Phase on DSS-25-45-65 duration of 6 hours in weeks 01,02,05,06,26,39,40,48,49, and for week 03 (2 passes), week 04 (3 passes), and week 18 (1 pass).
 - 2008: On DSS-26,45,65 added 4 passes for TCM in week 40; 2 passes for weeks 04,15,36,42,51; added Cruise Phase in weeks 09,16,33,34,37, and added 6 passes in week 52, added 2 passes in weeks 04,05,36,43, added 1 pass in weeks 06,10,44.
 - 2009: On DSS-26,45,65 added 4 passes for TCM in week 39; 2 passes in weeks 35,42,52; 4 passes for Cruise duration in weeks 36,43,45,53; 5 passes in week 52; 3 passes in weeks 35,46; 7 passes for weeks 32,33; 2 passes in weeks 42,44.



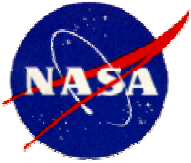
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Project Changes Since February 2006



- ◆ **Mars Reconnaissance Orbiter (MRO)**
 - Will not use Ka-Band unless it swaps its main on-board processor
 - 2008: Added 5 passes for Relay Comp on DSS-25,26,34,54,55 for support duration of 8 hours in week 52.
 - 2009: Added 7 passes per week for Relay Comp on DSS-25,26,34,54,55 for support duration of 8 hours for entire year.
- ◆ **Mars Science Laboratory (MSL)**
 - Moved mission from Advanced/Planning to Ongoing/Approved mission set
- ◆ **New Horizons (NHPC)**
 - 2007: Added 1 pass for Solar Conj on 70M in weeks 49 and 51; Added 1 pass for L MET CCD CMD on DSS-25,26 in week 44. Added 1 pass for Jupiter Departure on 70M in week 13, added 4 passes in week 20, added 2 passes in week 21; added 2 passes for Maneuver on 70M in week 48, added 5 passes in week 49, and deleted 7 passes in week 50.
 - 2008 - 2016: Added one pass for Solar Conj on 70M in weeks 51,52 (2008), added 1 pass in weeks 52,53 (2009), added 2 passes in week 52 (2010), added 1 pass in week 52 (2011), added 1 pass in weeks 01, 52 (2012), added 1 pass in week 01 (2013), added 2 passes in week 01 (2014), added 1 pass in week 01, 02, 53 (2015), and added 1 pass in week 01 (2016). Added 1 pass per month for Telemetry support in weeks 11 of 2008 through weeks 42 of 2014.



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Project Changes Since February 2006



- ◆ **Opportunity (Mars Exploration Rover –B) (MER 1)**
 - End of extended mission changed from 09/29/2008 to 09/30/2009
- ◆ **Phoenix (PHX)**
 - 2008: Added 70M subnet to existing PHX Approach from 03/26/2008 – 04/09/2008, from 04/11/2008 – 05/09/2008, from 05/19/2008 – 05/25/2008, TCM5 on 05/17/2008; deleted 12 passes for PHX Approach phase on 70M in week 21.
- ◆ **Polar (POLR)**
 - End of extended mission changed from 12/31/2006 to 03/31/2007
- ◆ **Rosetta (ROSE)**
 - 2007: Added 3 passes for Mars Swingby on 70M support duration 4 hours in week 07, added 2 passes for week 08; reduced 3 passes for Mars Swingby on DSS-15,24,54 support duration of 4 hours in weeks 01 – 04
- ◆ **Selene (SELE)**
 - 2007: Added 2 passes for LEOP TCM on DSS-54,24,34 in weeks 29 – 31; 6 passes in week 32; 10 passes in week 33, 7 passes in week 34; added 1 pass for LEOP TCM on DSS-46,66 support duration of 8 hours in weeks 29-31, 2 passes in week 32 & 34, 5 passes in week 33; Deleted SELE LOI event on DSS-54/66 and DSS-24,34 for weeks 32 – 34.



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Project Changes Since February 2006

- ◆ **SOHO**
 - Added Keyhole support in 2009 and 2010 and added HSO in 2009
- ◆ **Spirit (Mars Exploration Rover –A) (MER 2)**
 - End of extended mission changed from 09/29/2008 to 09/30/2009
- ◆ **Spitzer (STF)**
 - End of prime mission changed from 10/19/2006 to 05/31/2009
 - End of extended mission changed to 05/31/2014
 - Increased from 1.0 hour duration to 1.25 hour for all passes
- ◆ **Stereo Ahead and Stereo Behind (STA, STB)**
 - Launch date changed from 06/23/2006 to NET 08/31/2006



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Project Changes Since February 2006

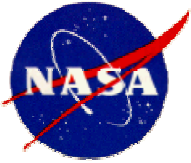


◆ Ulysses (ULYS)

- 2007: Modified Nutation support to use DSS-34,43 with 14 passes per week in weeks 06 - 18. Distributed DSS-34,43 passes in weeks 19 - 31 into 19 different durations, ranging from 1.75 to 9 hours, totaling 14 passes per week altogether. Distributed passes on DSS-54,63 in weeks 22 - 31 into 8 different durations, ranging from 4.5 to 7.5 hours, totaling 7 passes per week altogether. Distributed passes on DSS-14,24 in weeks 19 - 31 into 13 different durations, ranging from 4.25 to 9 hours, totaling 7 passes per week altogether. Moved passes on DSS-14,24,34,43,54 to DSS-14,43,63,34B1 in weeks 32 - 37. Moved passes on DSS-34,43 to DSS-14,24,54,63 in weeks 38 - 48 and increased from 14 to 15 passes per week in weeks 38 - 41 and from 14 tracks to none on weeks 49 - 52. Removed ULYS Ranging pass from DSS-24,34 in weeks 21,25, and 29.
- 2008: Modified Nutation passes on DSS-14,24,54,63 with 18 passes per week on weeks 01, 03, and 05. Weeks 02 and 04 will have 17 passes per week, and weeks 06 - 09 will have 14 passes per week.

◆ Venus Express (VEX)

- 2008: Deleted Bi-static Radar in weeks 08 – 09; extended Solar Corona support on 70M for weeks 25, 26 with 2 passes and reduced from 5 passes to 3 passes for weeks 23 and 24.



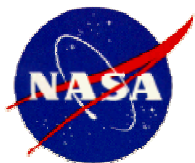
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Project Changes Since February 2006



- ◆ **Voyager 1 and 2 (VGR1 and VGR2)**
 - End of extended mission (EOEM) changed from 09/30/2010 to 12/31/2010.
 - VGR1 requested additional six passes on 34H,34B1,34B2,70M support duration of 4 hours from 09/14/2006 – 12/31/2010.
- ◆ **Wind**
 - Deleted Wind TCM on DSS-24 for weeks 01, 14, 27, 40.

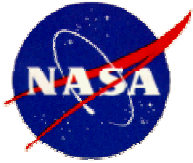


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New Projects Since February 2006

| Project | Acronym | Launch or Start | EOPM | EOEM |
|--|----------------|------------------------|-----------------|-------------|
| Lunar Crater Observation and Sensing Satellite (LCROSS) | ???? | 10/31/08 | 01/31/09 | TBD |
| Lunar Reconnaissance Orbiter (LRO) | LRO | 10/31/08 | 09/31/10 | TBD |
| Chandrayaan – 1 | ???? | 03/01/08 | 03/01/10 | TBD |



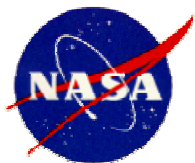
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Removed/Unsupported Projects Since February 2006

| Project | Acronym | Launch or Start | EOPM | EOEM |
|--|---------|-----------------|----------|----------|
| Stardust (Successfully completed mission) | SDU | 02/07/99 | 01/30/06 | - - - |
| Space Technology 5 - S/C #1 (Successfully completed mission) | ST51 | 03/11/06 | 06/11/06 | 06/30/06 |
| Space Technology 5 - S/C #2 (Successfully completed mission) | ST52 | 03/11/06 | 06/11/06 | 06/30/06 |
| Space Technology 5 - S/C #3 (Successfully completed mission) | ST53 | 03/11/06 | 06/11/06 | 06/30/06 |
| Lunar - A | LUNA | 08/01/09 | 03/10/10 | - - - |



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DSN User / Mission Planning Set

– Ongoing / Approved Projects –

| Project | Acronym | Launch or Start | EOPM | EOEM |
|--|---------|-----------------|----------|----------|
| DSN Antenna Calibration | DSN | -- | -- | -- |
| DSS Maintenance | DSS | -- | -- | -- |
| DSN ZDD Calibration | DSN | 11/01/04 | -- | -- |
| European and Global VLBI Systems | EGS | -- | -- | -- |
| Ground Based Radio Astronomy | GBRA | -- | -- | -- |
| Reference Frame Calibration (Cat M&E and Clock Sync) | DSN | -- | -- | -- |
| Space Geodesy | SGP | -- | -- | -- |
| Voyager 2 | VGR2 | 08/20/77 | 10/15/89 | 12/31/10 |
| Voyager 1 | VGR1 | 09/05/77 | 12/31/80 | 12/31/10 |
| Goldstone Solar System Radar | GSSR | 04/01/85 | -- | -- |
| Ulysses | ULYS | 10/06/90 | 09/11/95 | 03/30/08 |
| Geotail | GTL | 07/24/92 | 07/24/95 | 10/01/08 |
| Wind | WIND | 11/01/94 | 11/01/97 | 10/01/11 |
| SOHO | SOHO | 12/02/95 | 05/02/98 | 10/01/11 |
| Polar | POLR | 02/22/96 | 08/23/97 | 03/31/07 |
| Mars Global Surveyor | MGS | 11/07/96 | 02/01/01 | 11/03/09 |
| Advanced Composition Explorer | ACE | 08/25/97 | 02/01/01 | 10/01/13 |



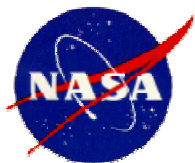
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DSN User / Mission Planning Set

– Ongoing / Approved Projects –

| Project | Acronym | Launch or Start | EOPM | EOEM |
|---|---------|-----------------|----------|----------|
| Cassini | CAS | 10/15/97 | 06/30/08 | 06/30/10 |
| Chandra X-Ray Observatory | CHDR | 07/23/99 | 07/24/09 | 07/24/14 |
| Imager for Magnetopause-to-Aurora Global Exploration | IMAG | 03/25/00 | 05/30/02 | TBS |
| Cluster 2 - S/C #2 (Samba) | CLU2 | 07/16/00 | 02/15/03 | 12/31/09 |
| Cluster 2 - S/C #3 (Rumba) | CLU3 | 07/16/00 | 02/15/03 | 12/31/09 |
| Cluster 2 - S/C #1 (Salsa) | CLU1 | 08/09/00 | 02/15/03 | 12/31/09 |
| Cluster 2 - S/C #4 (Tango) | CLU4 | 08/09/00 | 02/15/03 | 12/31/09 |
| Mars Odyssey 2001 | M01O | 04/07/01 | 08/24/04 | 12/31/10 |
| Wilkinson Microwave Anisotropy Probe | WMAP | 06/30/01 | 10/01/03 | 09/30/10 |
| Advanced Tracking and Observational Techniques (ATOT) | ATOT | 02/01/02 | 12/31/08 | - - - |
| International Gamma Ray Astrophysics Lab | INTG | 10/17/02 | 12/18/04 | 12/16/10 |
| Hayabusa (MUSES - C) | MUSC | 05/09/03 | 06/10/07 | TBS |
| Mars Express Orbiter | MEX | 06/02/03 | 02/11/06 | 12/31/08 |
| Spirit (Mars Exploration Rover - A) | MER2 | 06/10/03 | 04/06/04 | 09/30/08 |
| Opportunity (Mars Exploration Rover - B) | MER1 | 07/07/03 | 04/27/04 | 09/30/08 |
| Spitzer Space Telescope (SIRTF) | STF | 08/25/03 | 05/31/09 | 05/31/14 |
| Rosetta | ROSE | 02/26/04 | 12/31/15 | - - - |



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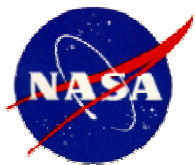
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DSN User / Mission Planning Set



– Ongoing / Approved Projects –

| Project | Acronym | Launch or Start | EOPM | EOEM |
|---|---------|-----------------|----------|----------|
| Messenger | MSGR | 08/03/04 | 03/19/12 | - - - |
| Mars Reconnaissance Orbiter | MRO | 08/12/05 | 12/31/10 | 12/31/15 |
| Venus Express | VEX | 11/09/05 | 09/24/07 | 01/22/09 |
| New Horizons | NHPC | 01/17/05 | 04/17/16 | TBD |
| Stereo Ahead | STA | 08/20/06 | 09/26/08 | 09/26/11 |
| Stereo Behind | STB | 08/20/06 | 09/26/08 | 09/26/11 |
| Dawn | DAWN | 06/20/07 | 01/12/16 | TBD |
| Phoenix | PHX | 08/03/07 | 10/26/08 | TBD |
| Lunar Reconnaissance Orbiter (LRO) | LRO | 10/31/08 | 09/31/10 | TBD |
| Lunar Crater Observation and Sensing Satellite (LCROSS) | ???? | 10/31/08 | 01/31/09 | TBD |
| Kepler | KEPL | 11/01/08 | 06/30/12 | - - - |
| Mars Science Laboratory 2009 | MSL | 10/25/09 | 03/04/12 | TBD |



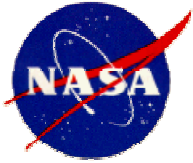
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DSN User / Mission Planning Set

– Advanced / Planning Projects –

| Project | Acronym | Launch or Start | EOPM | EOEM |
|------------------------------|---------|--------------------|----------|----------|
| SELENE | SELE | 07/16/07 | 08/26/07 | TBD |
| Chandrayaan – 1 | ???? | 03/01/08 | 03/01/10 | TBD |
| Juno | JUNO | 07/08/10 | 09/18/16 | TBD |
| Space Interferometry Mission | SIM | 03/13/11 | 09/13/16 | 09/13/21 |
| Mars Scout 2011 | M11L | 01/31/12 | 09/10/14 | TBD |
| James Webb Space Telescope | JWST | 06/01/13 | 07/31/16 | TBD |
| Mars Orbiter 2013 | M13O | 11/28/13 | 08/21/16 | TBD |



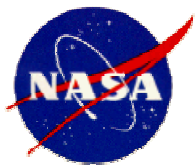
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DSN Major Downtimes by Date

– 2006 –

| Site | Description | Start | End | Duration (days) | Week(s) | Start DOY | End DOY |
|--------|--|------------|------------|--------------------|---------|--------------|------------|
| DSS 16 | Extended Downtime | 01/30/2006 | 12/31/2009 | 1432 | 05 - 53 | 030 | 365 |
| DSS 63 | Antenna Controller Replacement | 05/22/2006 | 12/31/2006 | 223 | 21 - 52 | 142 | 365 |
| DSS 43 | Elevation Bearing Inspection | 07/16/2006 | 07/21/2006 | 6 | 28 - 29 | 197 | 202 |
| DSS 14 | Elevation Bearing Inspection | 08/06/2006 | 08/10/2006 | 5 | 31 - 32 | 218 | 222 |
| DSS 14 | USC Acceptance Testing - NIB | 08/06/2006 | 08/10/2006 | 5 | 31 - 32 | 218 | 222 |
| DSS 15 | USC Acceptance Testing | 09/06/2006 | 09/07/2006 | 1 | 36 - 36 | 249 | 249 |
| DSS 15 | Antenna Drive Cabinet Refurbishment | 09/06/2006 | 10/10/2006 | 35 | 36 - 41 | 249 | 283 |
| DSS 45 | Antenna Controller Replacement | 10/11/2006 | 12/12/2006 | 63 | 41 - 50 | 284 | 346 |
| DSS 26 | USC Acceptance Testing | 10/14/2006 | 10/15/2006 | 2 | 41 - 41 | 287 | 288 |

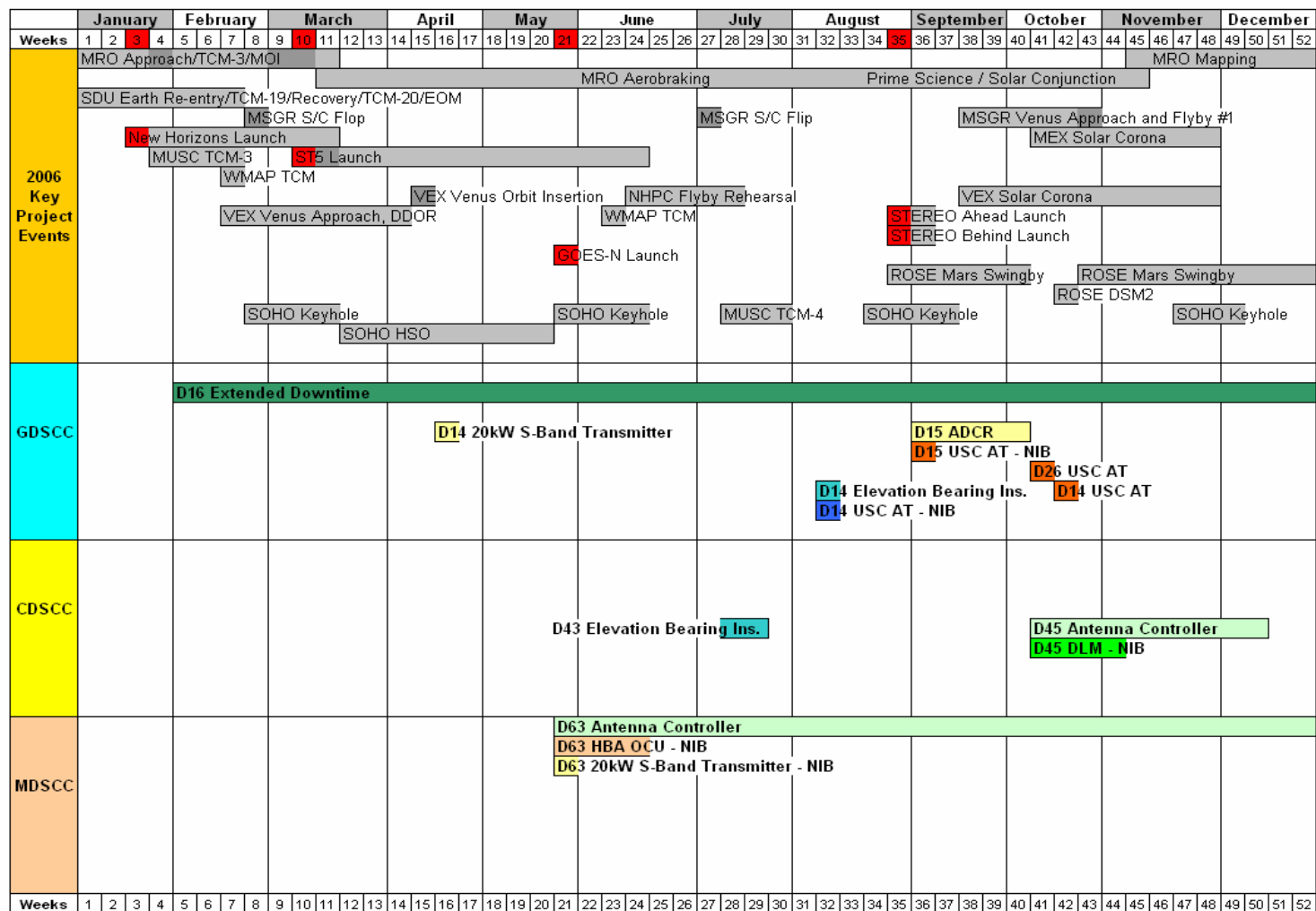


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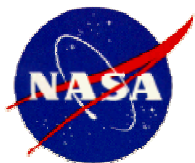
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DSN Major Downtimes by Date

– 2006 –



Revised: August 10, 2006



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DSN Major Downtimes by Date



– 2007 –

| Site | Description | Start | End | Duration (days) | Week(s) | Start DOY | End DOY |
|--------|--|------------|------------|--------------------|---------|--------------|------------|
| DSS 43 | RegROUT and Painting | 02/01/2007 | 02/11/2007 | 10 | 05 - 06 | 032 | 041 |
| DSS 43 | 20 kW S-Band Transmitter - NIB | 02/01/2007 | 02/04/2007 | 4 | 05 - 05 | 032 | 035 |
| DSS 65 | Antenna Drive Cabinet Refurbishment | 02/26/2007 | 04/29/2007 | 63 | 09 - 17 | 057 | 119 |
| DSS 65 | S-Band 200W U/L Install - NIB | 02/26/2007 | 04/29/2007 | 63 | 09 - 17 | 057 | 119 |
| DSS 65 | DLM - NIB | 04/02/2007 | 04/29/2007 | 28 | 14 - 17 | 092 | 119 |
| DSS 66 | Hydraulics Task | 04/30/2007 | 05/08/2007 | 9 | 18 - 19 | 120 | 128 |
| DSS 63 | Hydrostatic Bearing Replacement | 06/12/2007 | 09/16/2007 | 97 | 24 - 37 | 163 | 259 |
| DSS 63 | DLM - NIB | 06/12/2007 | 07/08/2007 | 27 | 24 - 27 | 163 | 189 |
| DSS 46 | Hydraulics Task | 07/02/2007 | 07/10/2007 | 9 | 27 - 28 | 183 | 191 |
| DSS 45 | Antenna Drive Cabinet Refurbishment | 08/27/2007 | 09/30/2007 | 35 | 35 - 39 | 239 | 273 |
| DSS 45 | S-Band 200W U/L Install - NIB | 08/27/2007 | 09/30/2007 | 35 | 35 - 39 | 239 | 273 |

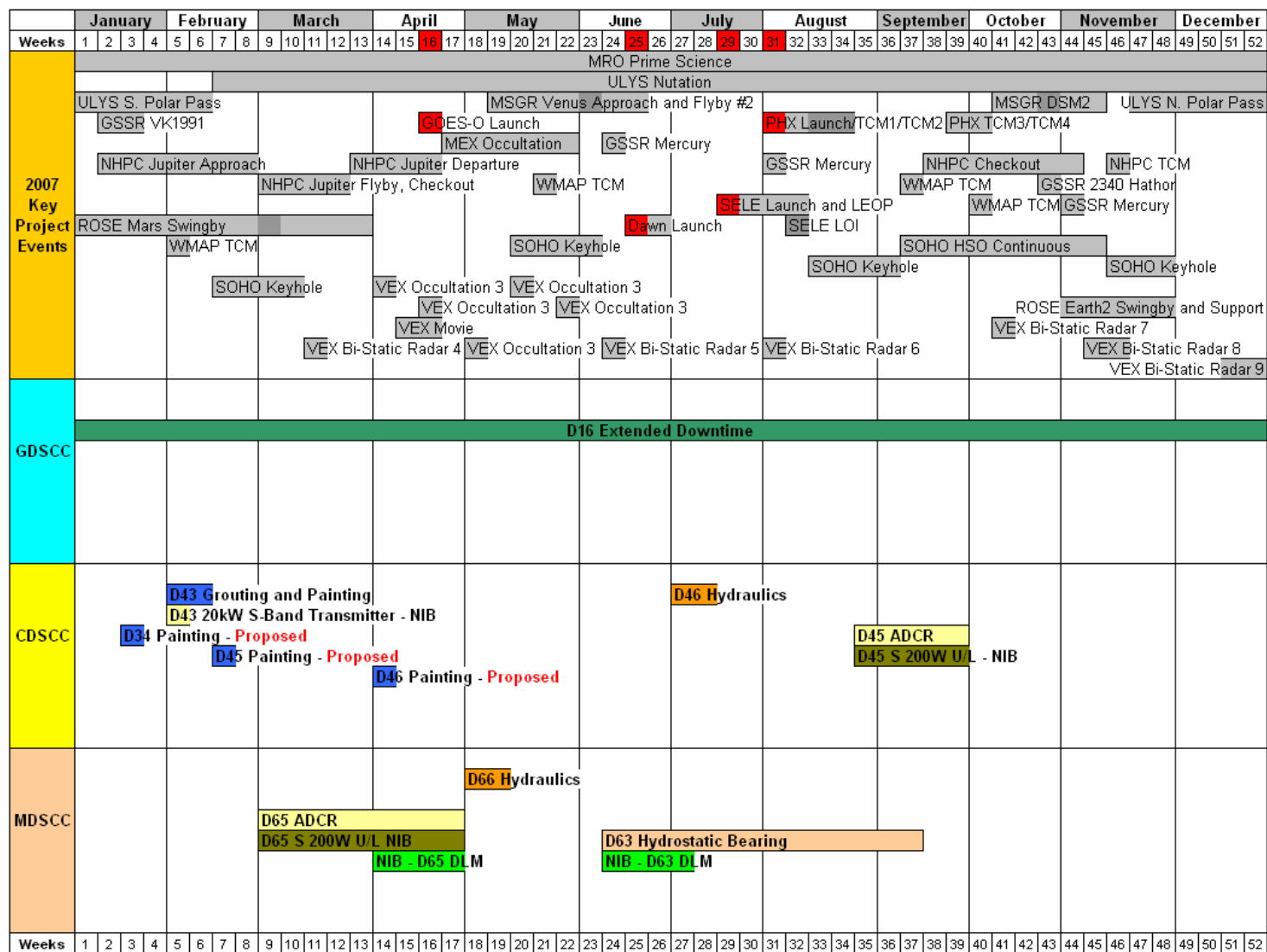


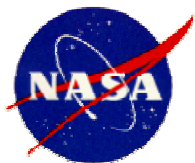
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DSN Major Downtimes by Date

– 2007 –





RESOURCE ALLOCATION REVIEW

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DSN Major Downtimes by Date



– 2008 –

| Site | Description | Start | End | Duration (days) | Week(s) | Start DOY | End DOY |
|--------|-------------------------------------|------------|------------|-----------------|---------|-----------|---------|
| DSS 54 | X/X-Ka Band Installation | 02/18/2008 | 04/13/2008 | 56 | 08 - 15 | 049 | 104 |
| DSS 54 | NIB - AZ Track Refurbishment | 02/18/2008 | 04/13/2008 | 56 | 08 - 15 | 049 | 104 |
| DSS 54 | NIB - AZ Data Gear Replacement | 02/18/2008 | 04/13/2008 | 56 | 08 - 15 | 049 | 104 |
| DSS 54 | NIB - Q-Band Installation | 02/18/2008 | 04/13/2008 | 56 | 08 - 15 | 049 | 104 |
| DSS 15 | Life Extension | 03/03/2008 | 05/11/2008 | 70 | 10 - 19 | 063 | 132 |
| DSS 15 | DLM – NIB | 03/03/2008 | 05/11/2008 | 70 | 10 – 19 | 063 | 132 |
| DSS 46 | Extended Downtime - Proposed | 09/29/2008 | ??? | ??? | ??? | ??? | ??? |
| DSS 66 | Extended Downtime - Proposed | 09/29/2008 | ??? | ??? | ??? | ??? | ??? |
| DSS 43 | DLM – NIB | 09/29/2008 | 10/26/2008 | 27 | 40 - 43 | 273 | 300 |
| DSS 43 | Life Extension | 09/29/2008 | 03/29/2009 | 182 | 40 - 13 | 273 | 088 |

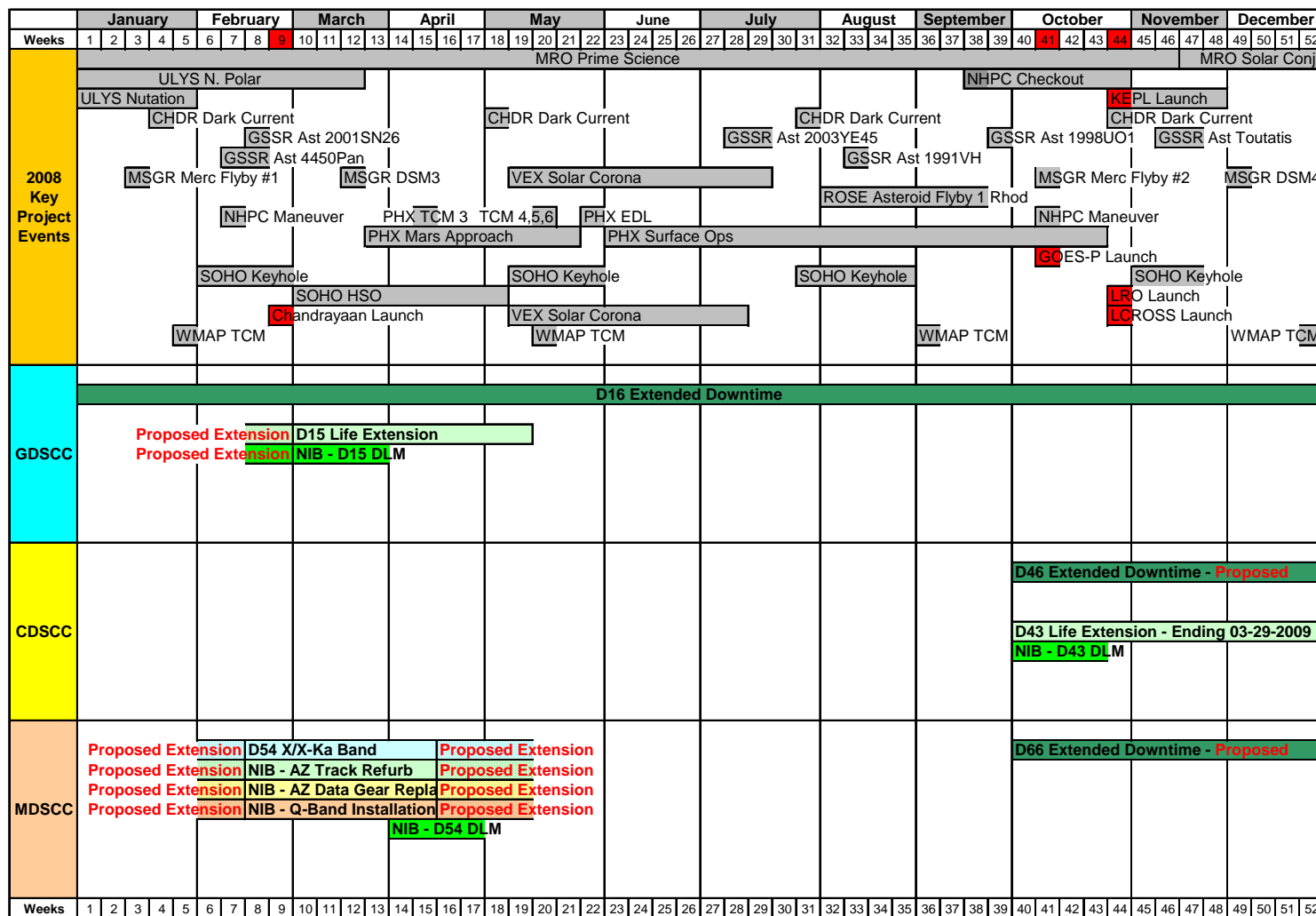


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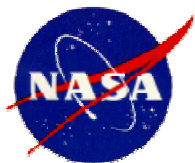
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DSN Major Downtimes by Date

– 2008 –



Revised: July 31, 2006



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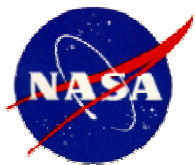
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DSN Major Downtimes by Date



– 2009 –

| Site | Description | Start | End | Duration (days) | Week(s) | Start DOY | End DOY |
|--------|-------------------------------------|------------|------------|--------------------|---------|--------------|------------|
| DSS 63 | Life Extension | 03/30/2009 | 09/27/2009 | 182 | 14 - 39 | 089 | 270 |
| DSS 46 | Extended Downtime - Proposed | 09/29/2008 | ??? | ??? | ??? | 273 | ??? |
| DSS 66 | Extended Downtime - Proposed | 09/29/2008 | ??? | ??? | ??? | 273 | ??? |
| DSS 14 | Life Extension | 09/28/2009 | 03/28/2010 | 182 | 40 - 12 | 271 | 087 |

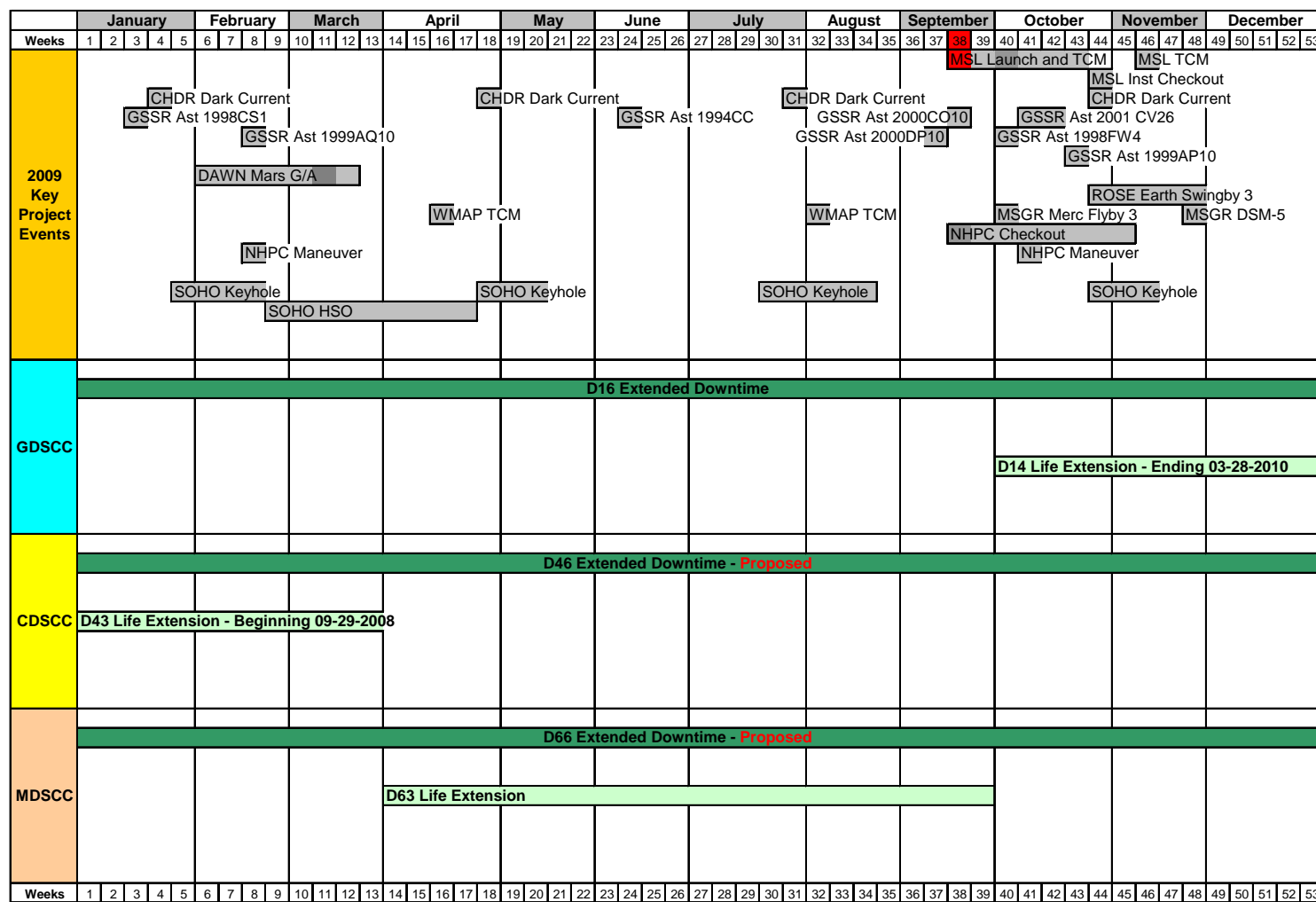


RESOURCE ALLOCATION REVIEW

Loading Study

DSN Major Downtimes by Date

– 2009 –





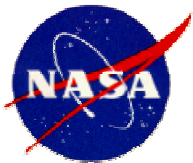
RESOURCE ALLOCATION REVIEW

Loading Study



IND Resource Implementation Planning Matrix

| Complex | Station | Subnet | S-Band | | X-Band | | Ka-Band | | NSP/ TT&C |
|---|---------|--------|--------|----------|--------|-----|----------|-----|--------------|
| | | | Down | Up | Down | Up | Down | Up | |
| 10 | DSS-14 | 70M | ✓ | ✓ | ✓ | ✓ | N/A | N/A | ✓ |
| 10 | DSS-15 | 34HEF | ✓ | N/A | ✓ | ✓ | N/A | N/A | ✓ |
| 10 | DSS-16 | 26M | ✓ | ✓ | N/A | N/A | N/A | N/A | N/A |
| 10 | DSS-24 | 34B1 | ✓ | ✓ | ✓ | ✓ | N/A | N/A | ✓ |
| 10 | DSS-25 | 34B2 | N/A | N/A | ✓ | ✓ | ✓ | N/A | ✓ |
| 10 | DSS-26 | 34B2 | N/A | N/A | ✓ | ✓ | ✓ | N/A | ✓ |
| 10 | DSS-27 | 34HSB | ✓ | ✓ | N/A | N/A | N/A | N/A | ✓ ✓ ✓ |
| 40 | DSS-34 | 34B1 | ✓ | ✓ | ✓ | ✓ | ✓ ✓ ✓ | N/A | ✓ |
| 40 | DSS-43 | 70M | ✓ | ✓ | ✓ | ✓ | N/A | N/A | ✓ |
| 40 | DSS-45 | 34HEF | ✓ | 10/01/07 | ✓ | ✓ | N/A | N/A | ✓ |
| 40 | DSS-46 | 26M | ✓ | ✓ | N/A | N/A | N/A | N/A | N/A |
| 60 | DSS-54 | 34B1 | ✓ | ✓ | ✓ | ✓ | 04/15/08 | N/A | ✓ |
| 60 | DSS-55 | 34B2 | N/A | N/A | ✓ | ✓ | ✓ ✓ ✓ | N/A | ✓ |
| 60 | DSS-63 | 70M | ✓ | ✓ | ✓ | ✓ | N/A | N/A | ✓ |
| 60 | DSS-65 | 34HEF | ✓ | 10/01/07 | ✓ | ✓ | N/A | N/A | ✓ |
| 60 | DSS-66 | 26M | ✓ | ✓ | N/A | N/A | N/A | N/A | N/A |
| N/A = Capability Not Planned xx/xx/xx = Capability Date Recently Changed As of: 08/01/06 ✓ ✓ ✓ = Capability Recently Exists ✓ = Capability Exists | | | | | | | | | |



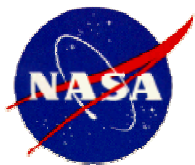
RESOURCE ALLOCATION REVIEW

Periods of Contention



| <i>Legend</i> | |
|----------------|---|
| 05 – 08 | Indicates months that DO contain contentions to be resolved |
| 18 – 22 | Indicates months that DO NOT contain contentions to be resolved |
| 01 – 04 | Indicates months without contention |

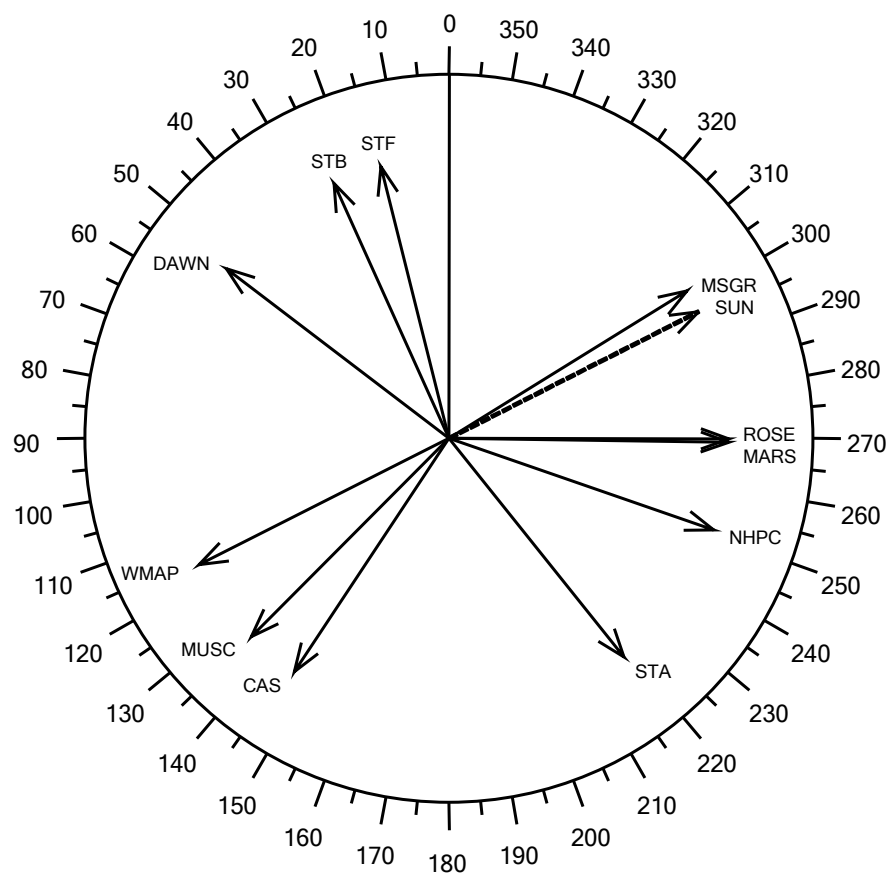
| Month | Weeks | | |
|-----------|---------|---------|---------|
| | 2007 | 2008 | 2009 |
| January | 01 – 04 | 01 – 05 | 01 – 05 |
| February | 05 – 08 | 06 – 09 | 06 – 09 |
| March | 09 – 13 | 10 – 13 | 10 – 13 |
| April | 14 – 17 | 14 – 17 | 14 – 18 |
| May | 18 – 22 | 18 – 22 | 19 – 22 |
| June | 23 – 26 | 23 – 26 | 23 – 26 |
| July | 27 – 30 | 27 – 31 | 27 – 31 |
| August | 31 – 35 | 32 – 35 | 32 – 35 |
| September | 36 – 39 | 36 – 39 | 36 – 39 |
| October | 40 – 43 | 40 – 44 | 40 – 44 |
| November | 44 – 48 | 45 – 48 | 45 – 48 |
| December | 49 – 52 | 49 – 52 | 49 – 53 |



RESOURCE ALLOCATION REVIEW

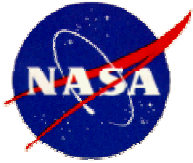
Spacecraft Right Ascension

January 15, 2007



THE SPACECRAFT RIGHT ASCENSION FIGURES SHOW THE POSITIONS OF THE SPACECRAFT IN THE SKY RELATIVE TO EACH OTHER ON THE 15TH OF EACH MONTH FOR THE YEAR INDICATED. RIGHT ASCENSION IS COMMONLY MEASURED IN HOURS, WITH 1 HOUR = 15 DEGREES.

THE ARROW INDICATES THE CENTER OF A SPACECRAFT VIEW FROM EARTH. EXTEND 60 DEGREES ON BOTH SIDES OF THE ARROW TO CALCULATE AN EIGHT (8) HOUR VIEW PERIOD.



RESOURCE ALLOCATION REVIEW

Events, Recommendations and Analyses



2007 Events, Recommendations and Analyses



RESOURCE ALLOCATION REVIEW

Events, Recommendations and Analyses



- ◆ **The Resource Allocation Review Redbook makes reference to monthly contention as low, moderate, severe, and extreme. The explanation of these terms is listed below.**
 - **Projected unsupportable time is expressed as low, moderate, severe, or extreme in the Analysis sections of this document. Projected unsupportable time is an estimate of the amount of requested time, typically in percentage of requirements or modified requirements, that is unsupportable, based on resource availability, other users' requirements, assumed priorities, and view periods. The following percentages apply:**

| | |
|---------------------|---------------------|
| Low/Workable | = <20% |
| Moderate | = 20% to 30% |
| Severe | = 31% to 45% |
| Extreme | = >45% |

Workable is a term used to express a condition wherein the projected unsupportable time is low. This condition occurs when the general forecasting analysis indicates a low percentage of unsupportable time or when agreements have been made to reduce contention to a workable level. Workable essentially means that experience has shown that the remaining contention may be solved during final schedule preparations and negotiations.

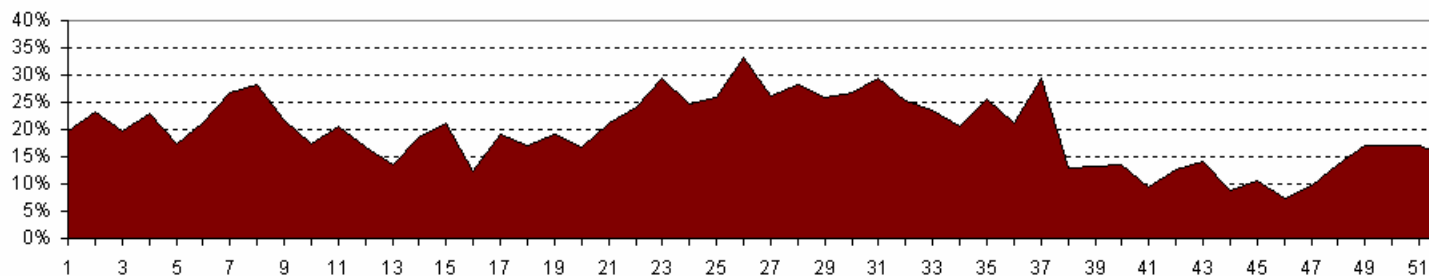


RESOURCE ALLOCATION REVIEW

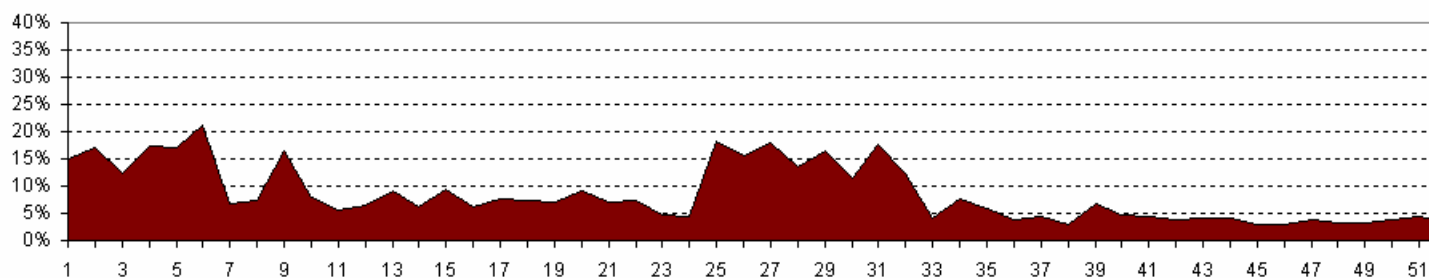
Events, Recommendations and Analyses

2007 Weekly Average User Unsupportable Time

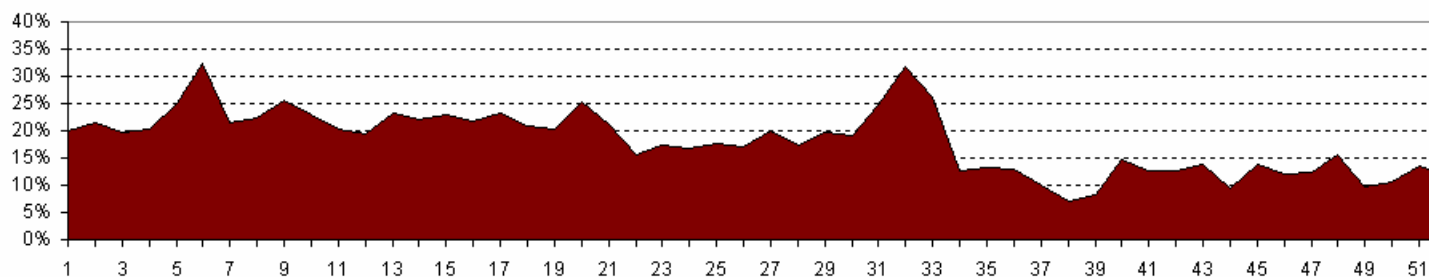
70M

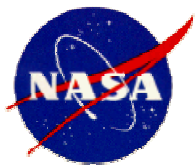


34HEF



34BWG1



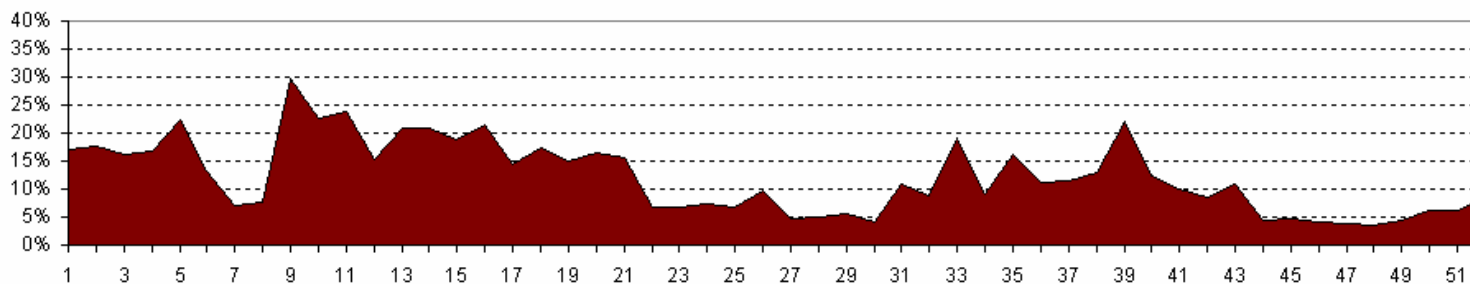


RESOURCE ALLOCATION REVIEW

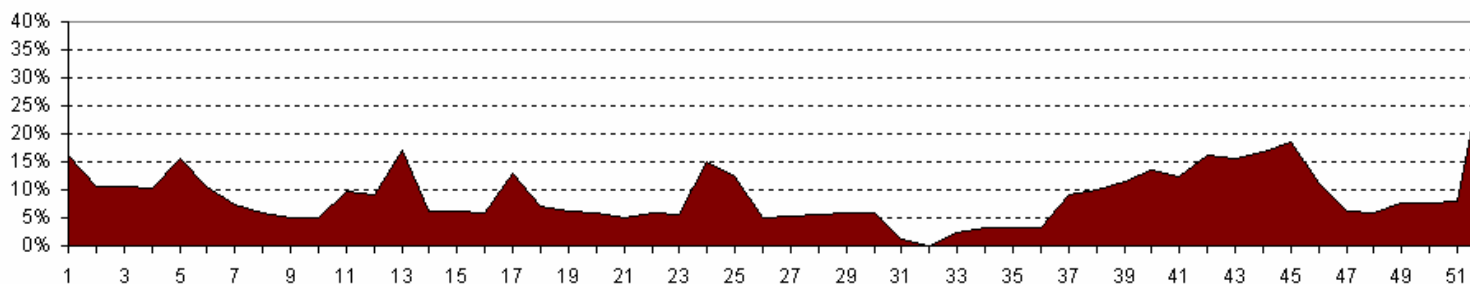
Events, Recommendations and Analyses

2007 Weekly Average User Unsupportable Time

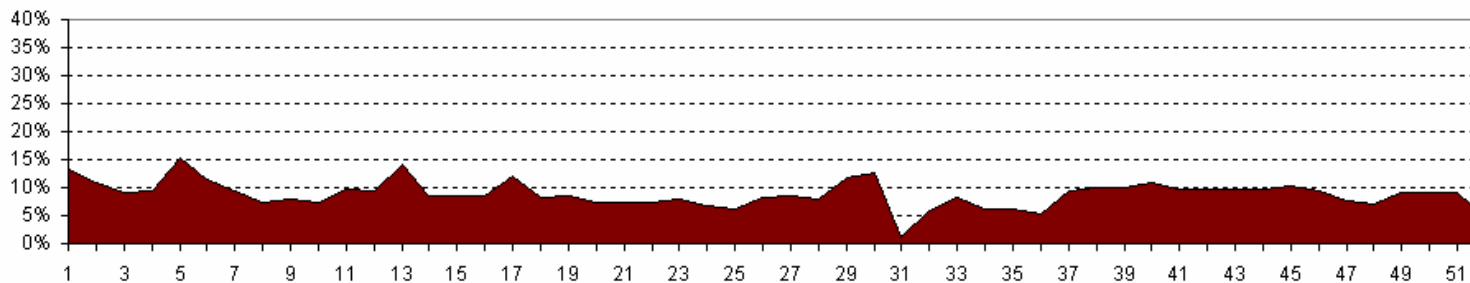
34BWG2

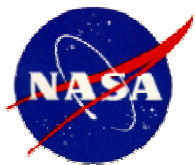


34HSB



26M





RESOURCE ALLOCATION REVIEW

Events, Recommendations and Analyses

2007 – January (Weeks 01 - 04)

EVENTS

ATOT A01 Ast in week 02

Cassini Tour in weeks 01 - 04

Chandra Earth Eclipse in weeks 01 - 02

GBRA Host Country in weeks 02 - 03

GSSR Ast 1991 VK and GODR in week 01

Mars Odyssey DDOR in week 04

Mars Express Bi-Static Radio Science in weeks 02 and 04

Mars Reconnaissance Orbiter X/Ka-DDOR in week 01

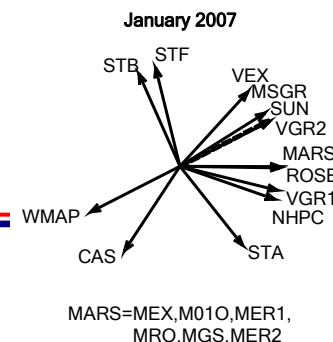
Messenger TCM in week 04

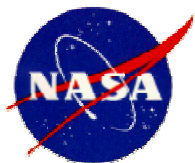
New Horizons Jupiter Approach in weeks 01 - 04

Polar TCM in week 02

Rosetta Delta DOR and Mars Swing-by in weeks 01 – 04

SGP Crust Dyn B-M4 and W-M4 in week 02 - 03





RESOURCE ALLOCATION REVIEW

Events, Recommendations and Analyses

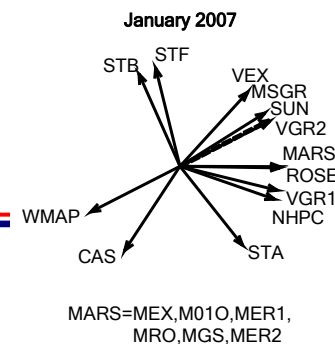
2007 – January (Weeks 01 - 04) (continued)

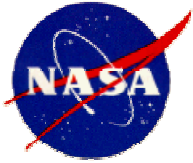
EVENTS

SOHO TSO in week 01

Ulysses South Polar in weeks 01 - 04

Wind TCM in week 01





RESOURCE ALLOCATION REVIEW

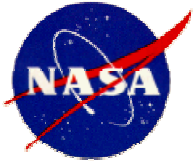
Events, Recommendations and Analyses

2007 – January (Weeks 01 - 04) (continued)



RECOMMENDATIONS

No Recommendations



RESOURCE ALLOCATION REVIEW

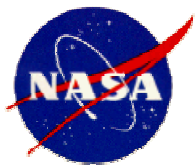
Events, Recommendations and Analyses

2007 – January (Weeks 01 - 04) (continued)



ANALYSES

Contention levels on the 70M, 34HEF, 34BWG1, 34BWG2, 34HSB and 26M subnets are workable and should resolve during final schedule preparation and negotiations.



EVENTS

RESOURCE ALLOCATION REVIEW

Events, Recommendations and Analyses

2007 – February (Weeks 05 - 08)

**DSS-43 approved downtime for regrouting and painting in weeks 05 - 06;
DSS-43 20kW S-Band transmitter – NIB in week 05**

Cassini Tour in weeks 05 - 08

EGS EVN J-MS in week 08

GSSR GODR and Mercury in weeks 07 - 08

Mars Odyssey DDOR in week 08

Mars Express R/S Bi-Static in weeks 06 and 08

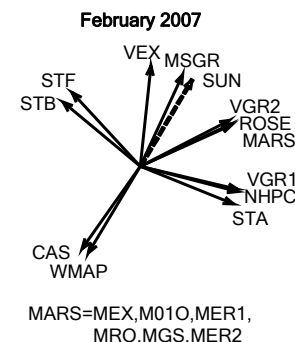
MUSC Re-entry in week 08

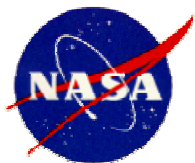
**New Horizons DDOR in weeks 05 - 08, Jupiter Approach and Flyby in weeks 05 - 07, and
Maneuver in week 09**

Rosetta DDOR in weeks 05 – 08, and Mars Swing-by in week 09, DOY 058

SOHO Keyhole and TSO in week 07 - 08

Ulysses Nutation and South Pole in week 05





RESOURCE ALLOCATION REVIEW

Events, Recommendations and Analyses

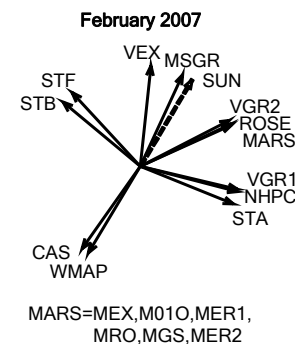
2007 – February (Weeks 05 - 08)

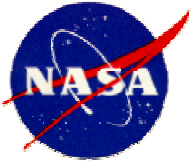
JPL

EVENTS

VGR1 MAGROL in week 5

Wind TCM in weeks 05 - 10





RESOURCE ALLOCATION REVIEW

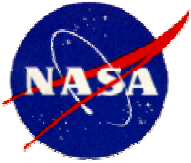
Events, Recommendations and Analyses

2007 – February (Weeks 05 - 08) (continued)



RECOMMENDATIONS

- ☺ ULYS move 10 of 14 passes from DSS-34/43 to DSS-34 and remaining 4 passes to DSS-43 in week 08.
- ☺ VGR2 move 4 of 7 passes from DSS-43,45,34 to DSS-34 in weeks 07 and 08.



RESOURCE ALLOCATION REVIEW

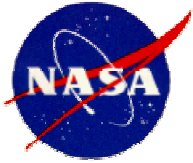
Events, Recommendations and Analyses

2007 – February (Weeks 05 - 08) (continued)

ANALYSES

(70M) The projected unsupportable time is moderate to extreme. This is due to the on-going projects (EGS, GSSR, Maintenance, MARS projects, NHPC, ROSE, SOHO, ULYS, VGR1, & VGR2) view period overlap. The projected unsupportable time is further compounded by the DSS-43 downtime.

Contention levels on the 34BWG2, 34HSB and 26M subnets are workable and should resolve during final schedule preparation and negotiations.



RESOURCE ALLOCATION REVIEW

Events, Recommendations and Analyses

2007 – June (Weeks 23 - 26)

EVENTS

DSS-63 approved downtime for Hydrostatic Bearing Replacement in weeks 24 - 37; DSS-63 approved DLM – NIB in weeks 24 – 27

Cassini Tour in weeks 23 - 26

Chandra Earth Eclipse in weeks 25 - 26

Dawn Launch Support and Initial Acquisition beginning on week 25, DOY 171

GBRA Host Country in weeks 24 - 25

Odyssey DDOR in week 24

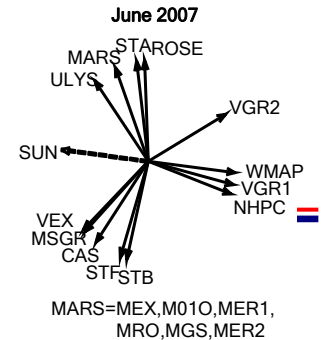
Mars Express Occultation in week 23

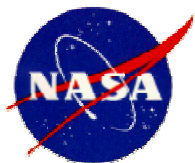
Messenger DDOR, TCM, and Venus Flyby 2 in weeks 23 - 24

MUSC DDOR E/W, N/S in week 23

New Horizons Jupiter Depart in weeks 23 – 26

SOHO Keyhole, Keyhole Maneuver, TSO in weeks 23 - 24





RESOURCE ALLOCATION REVIEW

Events, Recommendations and Analyses

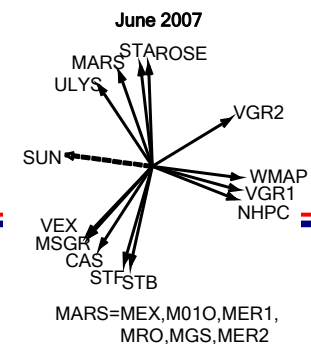
2007 – June (Weeks 23 - 26) (continued)

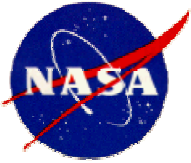
EVENTS

Ulysses Nutation in weeks 23 – 26

Venus Express Bi-Static Radar in week 24

Voyager 2 MAGROL in week 24





RESOURCE ALLOCATION REVIEW

Events, Recommendations and Analyses

2007 – June (Weeks 23 – 26) (continued)



RECOMMENDATIONS

- ☺ DSS Maintenance delete 1 of 2 DSS-14 Maintenance in week 23, move DSS-43 maintenance from Monday to Thursday in week 23 and delete DSS-63 Maintenance and Bearing Maintenance in week 23.
- ☺ ULYS move 10 of 14 passes from DSS-34/43 to DSS-34 and the remaining 4 passes to DSS-43 in weeks 23 – 25.



RESOURCE ALLOCATION REVIEW

Events, Recommendations and Analyses

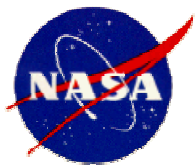
2007 – June (Weeks 23 - 26) (continued)



ANALYSES

(70M) The projected unsupportable time is moderate to extreme. This is due to the on-going projects (EGS, Maintenance, MARS projects, MSGR Venus Flyby 2, & ULYS) view period overlap. The projected unsupportable time is further compounded by the DSS-63 downtime beginning in week 24.

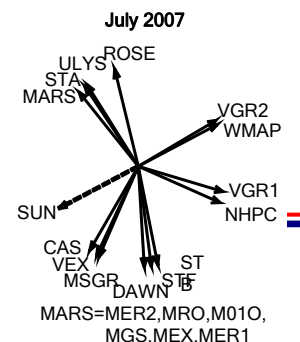
Contention levels on the 34 BWG1, 34BWG2, 34HSB and 26M subnets are workable and should resolve during final schedule preparation and negotiations.



RESOURCE ALLOCATION REVIEW

Events, Recommendations and Analyses

2007 – July (Weeks 27 - 30)



EVENTS

DSS-46 approved downtime for Hydraulics Task start in weeks 27 - 28

**DSS-63 approved downtime for Hydrostatic Bearing Replacement in weeks 24 – 37;
DSS-63 approved DLM – NIB in weeks 24 – 27**

Cassini Tour in weeks 27 - 30

Chandra Earth Eclipse in week 27

Dawn Launch Support continues through week 29

GBRA Host Country in weeks 26,27,30

Mars Odyssey DDOR in week 28

Selene Launch, Initial Acquisition, LEOP begins in week 29, DOY 197

SOHO TSO in week 29

Ulysses Nutation in weeks 27 - 30



RESOURCE ALLOCATION REVIEW

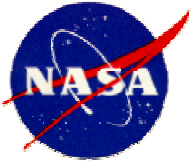
Events, Recommendations and Analyses

2007 – July (Weeks 27 - 30) (continued)



RECOMMENDATIONS

- ☺ M01O Map MSPA with MGS Map move 4 supports from DSS-14 to 34B2 in week 27 and 3 supports from DSS-14 to 34B2 in weeks 28-30 and move 2 supports from DSS-14,43 to 34H in weeks 28 and 29.
- ☺ MEX Orbital Science move 7 passes from DSS-15,25 to DSS-26,55 in weeks 27, 28 & 30 and move 7 passes from DSS-15,65 to DSS-26,55 in week 29.
- ☺ MGS Map MSPA with M01O Map move 4 supports from DSS-14 to 34B2 in week 27 and 3 supports from DSS-14 to 34B2 in weeks 28-30 and move 2 supports from DSS-14,43 to 34H in weeks 28 and 29.
- ☺ ULYS Nutation move 5 of 7 passes from DSS-14,24 to DSS-24 and remaining 2 passes to DSS-14 in weeks 27 – 30.



RESOURCE ALLOCATION REVIEW

Events, Recommendations and Analyses

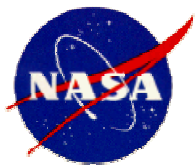
2007 – July (Weeks 27 - 30) (continued)



ANALYSES

(70M) The projected unsupportable time is moderate to extreme. This is due to the on-going projects (Maintenance, MARS projects, & ULYS) view period overlap. The projected unsupportable time is further compounded by the DSS-63 downtime beginning in week 24.

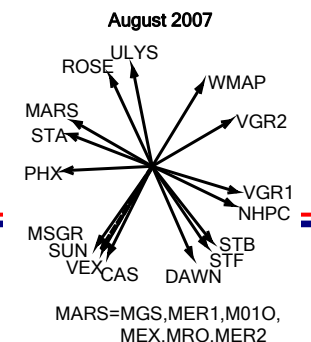
Contention levels on the 34HEF, 34BWG1, 34BWG2, 34HSB and 26M subnets are workable and should resolve during final schedule preparation and negotiations.



RESOURCE ALLOCATION REVIEW

Events, Recommendations and Analyses

2007 – August (Weeks 31 - 35)



EVENTS

DSS-63 approved downtime for Hydrostatic Bearing Replacement in weeks 24 – 37

DSS-45 approved downtime for Antenna Drive Cabinet Refurbishment and S-Band 200W U/L Install – NIB in weeks 35 – 39

Cassini Tour in weeks 31 - 35

GBRA Host Country in weeks 32 - 33

Mars Odyssey DDOR in week 33

Mars Reconnaissance Orbiter X/Ka-DDOR in week 33

Phoenix Launch in week 31, DOY 216; TCM in week 32; DDOR in weeks 34 – 35

Ulysses Nutation in weeks 31 – 35

Venus Express Bi-Static Radar in week 31

Voyager 1 MAGROL in week 31



RESOURCE ALLOCATION REVIEW

Events, Recommendations and Analyses

2007 – August (Weeks 31 - 35) (continued)

RECOMMENDATIONS

- ☺ M01O Map MSPA with M01O Map move 2 supports from DSS-14,43 to 34H in weeks 31 & 32, move 5 supports from DSS-14 to 34B2 in week 31, 3 supports from DSS-14 to 34H in week 32, 4 supports from DSS-14 to 34B2 in week 33 and 3 supports from DSS-14 to 34B2 in week 34.
- ☺ MGS Map MSPA with M01O Map move 2 supports from DSS-14,43 to 34H in weeks 31 & 32, move 5 supports from DSS-14 to 34B2 in week 31, 3 supports from DSS-14 to 34H in week 32, 4 supports from DSS-14 to 34B2 in week 33 and 3 supports from DSS-14 to 34B2 in week 34.
- ☺ ULYS move 10 of 14 passes from DSS-34/43 to DSS-34 and remaining 4 passes to DSS-43 in week 31.



RESOURCE ALLOCATION REVIEW

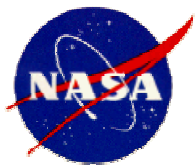
Events, Recommendations and Analyses

2007 – August (Weeks 31 - 35) (continued)

ANALYSES

(70M) The projected unsupportable time is moderate to extreme. This is due to the on-going projects (MARS projects & ULYS) view period overlap. The projected unsupportable time is further compounded by the DSS-63 downtime beginning in week 24.

Contention levels on the 34HEF, 34BWG1, 34BWG2, 34HSB and 26M subnets are workable and should resolve during final schedule preparation and negotiations.



RESOURCE ALLOCATION REVIEW

Events, Recommendations and Analyses

2007 – September (Weeks 36 - 39)

EVENTS

DSS-45 approved downtime for Antenna Drive Cabinet Refurbishment and S-Band 200W U/L Install – NIB in weeks 35 – 39

Cassini Tour in weeks 36 - 39

GBRA Host Country in weeks 36 – 37

GSSR GODR in week 38

Mars Odyssey DDOR in week 37

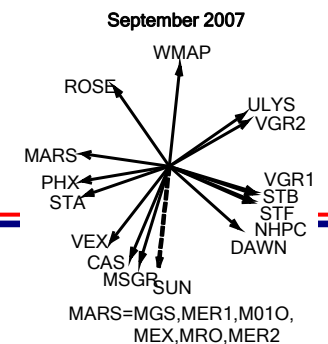
SOHO Keyhole in week 36

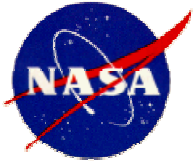
Ulysses Nutation in weeks 36 - 39

Voyager 1 MAGROL in week 39

Wind TCM in week 38

WMAP Maneuver in week 39





RESOURCE ALLOCATION REVIEW

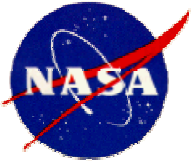
Events, Recommendations and Analyses

2007 – September (Weeks 36 - 39) (continued)



RECOMMENDATIONS

No Recommendations



RESOURCE ALLOCATION REVIEW

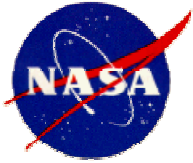
Events, Recommendations and Analyses

2007 – September (Weeks 36 - 39) (continued)



ANALYSES

1. Contention levels on the 70M, 34HEF, 34BWG1, 34BWG2, 34HSB and 26M subnets are workable and should resolve during final schedule preparation and negotiations.



RESOURCE ALLOCATION REVIEW

Events, Recommendations and Analyses



2008 Events, Recommendations and Analyses

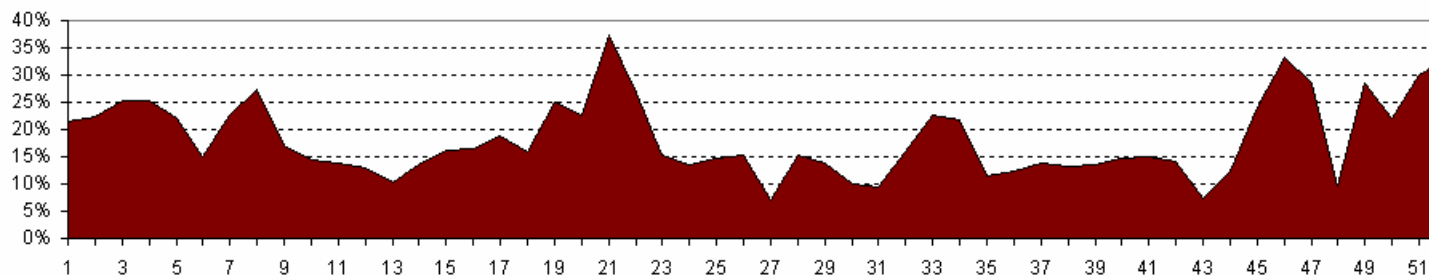


RESOURCE ALLOCATION REVIEW

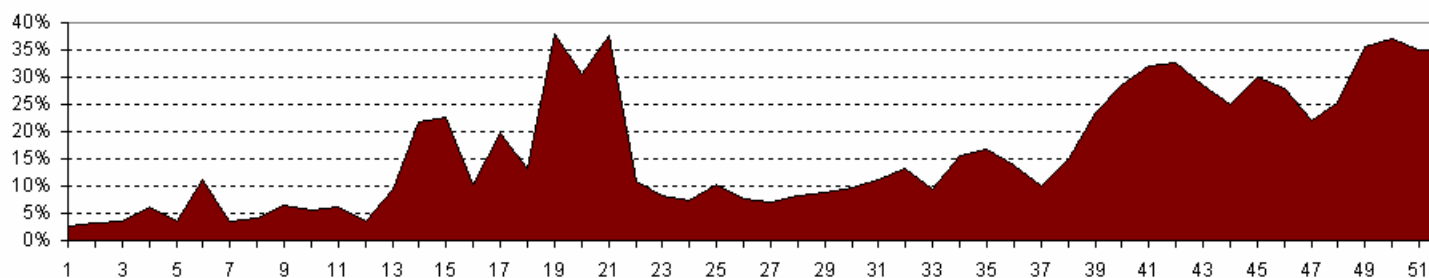
Events, Recommendations and Analyses

2008 Weekly Average User Unsupportable Time

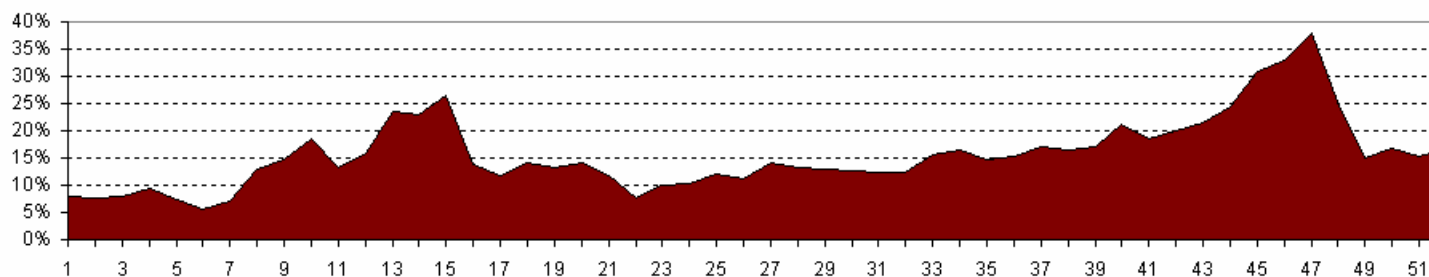
70M

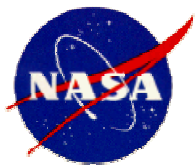


34HEF



34BWG1



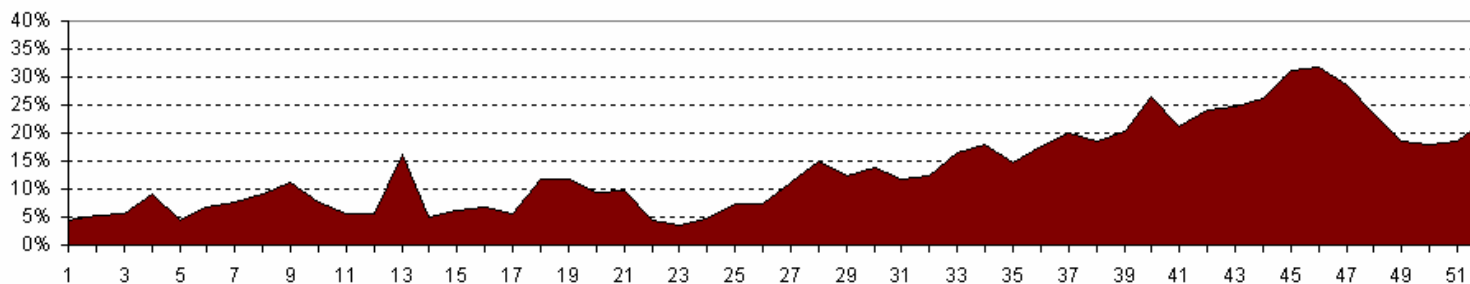


RESOURCE ALLOCATION REVIEW

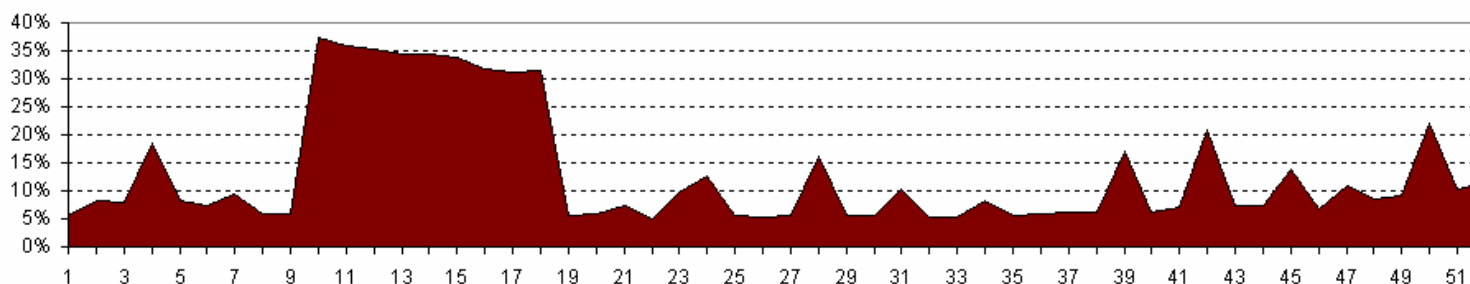
Events, Recommendations and Analyses

2008 Weekly Average User Unsupportable Time

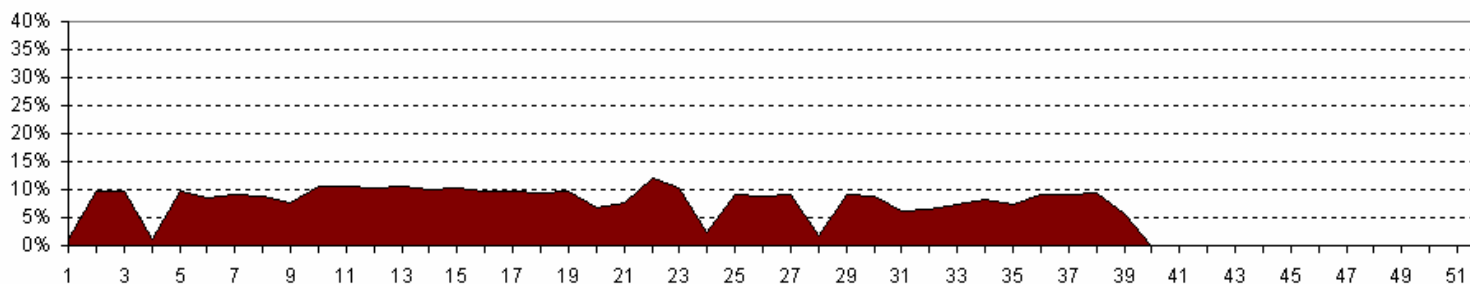
34BWG2

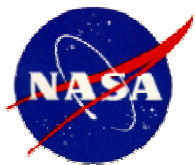


34HSB



26M





RESOURCE ALLOCATION REVIEW

Events, Recommendations and Analyses

2008 – January (Weeks 01 - 05)



EVENTS

Cassini Tour in weeks 01 – 05

GBRA Host Country in weeks 02 - 05

Mars Odyssey DDOR in week 03

Mars Reconnaissance Orbiter X/Ka DDOR in weeks 01 and 05

Messenger TCM in weeks 02 and 04

Phoenix DDOR in weeks 01 – 05

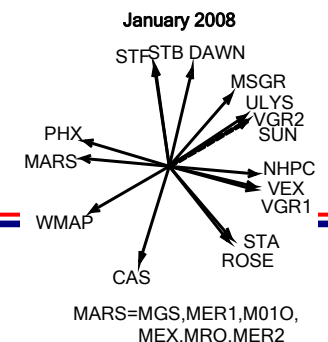
SOHO Keyhole and TSO in week 04

Ulysses Nutation in weeks 01 – 05

Voyager 1 MAGROL in week 05

Wind TCM in week 02

WMAP Maneuver in week 04





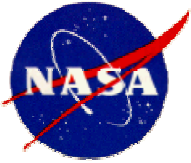
RESOURCE ALLOCATION REVIEW

Events, Recommendations and Analyses

2008 – January (Weeks 01 - 05) (continued)

RECOMMENDATIONS

- ☺ MRO Prime Science MSPA 7 of 7 passes with M01O Themis and move from 70M to DSS-43,63.
- ☺ M01O Themis MSPA 7 of 7 passes with MRO Prime Science and move from 70M to DSS-43,63.
- ☺ MSGR Mercury FB1 delete 6 of 8 70M passes from week 03 and add 1 pass in week 04 and 07 each and add 2 passes in week 05 and 06 each.
- ☺ NHPC Move Maneuver Support from 70M to DSS-43,63 Weeks 02 and 03.
- ☺ ULYS Move Nutation support from DSS-14,24,54,63 to DSS-24,54,63 and reduce by 1 support per week. Add 1 support per week at DSS-14 only.



RESOURCE ALLOCATION REVIEW

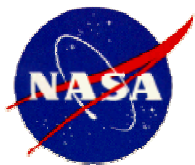
Events, Recommendations and Analyses

2008 – January (Weeks 01 - 05) (continued)

ANALYSES

(70M) The projected unsupportable time is moderate to extreme for DSS Maintenance, CLU2, GSSR, M01O, MRO, SOHO STF, and ULYS, due to oversubscription of DSS-14 and DSS-63 from GSSR Mars, ULYS Nutation, M010 Themis, MSGR Flyby1, MRO Prime Science, and NHPC Maneuver.

Contention levels on the 34HEF, 34BWG1, 34BWG2, 34HSB and 26M subnets are workable and should resolve during final schedule preparation and negotiations.



RESOURCE ALLOCATION REVIEW

Events, Recommendations and Analyses

2008 – February (Weeks 06 - 09)

EVENTS

DSS-54 approved downtime for X/Ka Band Installation, AZ Track Refurbishment (NIB), AZ Data Gear Replacement (NIB), and Q-band installation (NIB) in weeks 08 -15, DSS-54 proposed 2 weeks extension downtime in weeks 06 – 08

DSS-15 proposed 2 weeks extension for Life Extension and DLM (NIB) downtime in weeks 08 - 10

Cassini Tour in weeks 06 – 09

GBRA Host Country in weeks 05 – 9

Mars Odyssey DDOR in week 07

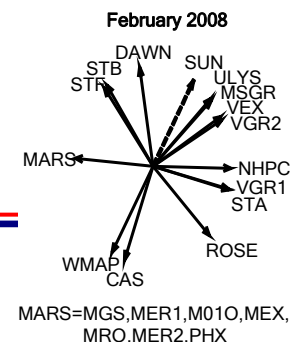
Mars Reconnaissance Orbiter X/Ka DDOR in weeks 05 and 09

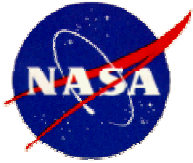
Phoenix DDOR in weeks 05 – 09

SOHO Keyhole Maneuver in weeks 06 – 09

Ulysses Nutation in weeks 05 – 09

Voyager 1 MAGROL in week 05.





RESOURCE ALLOCATION REVIEW

Events, Recommendations and Analyses

2008 – February (Weeks 06 - 09) (continued)

RECOMMENDATIONS

- ☺ DSS approve proposed DSS-15 downtime extension for Life Extension in weeks 08 – 09 and DSS-54 downtime extension for X/Ka Band installation in weeks 06 - 07. (2,3)
- ☺ CAS Tour change support at DSS-25,26,34,54,55 to DSS-25,26,34,55 in weeks 06 – 09. Change support at DSS-15,45,55 to DSS-25,45,55 in weeks 08 – 09. (2,3)
- ☺ CLU2 1/2/3/4 SSO change support from DSS-66/54/65/63 to DSS-66/65/63 in week 07 and change support from DSS-27/24/15/14 to DSS-27/24/14 (2,3)
- ☺ MEX Orbital Science change support at DSS 15,26 to DSS- 25,26 in weeks 08 – 09. (2)
- ☺ MSGR Cruise change support at DSS-26,34,54 to DSS-26,45,55 in weeks 06 – 09 (3)
- ☺ PHX Cruise move support from DSS-26,45,54 to DSS-26,45,55 in weeks 06 – 09. (3)
- ☺ STB Prime Science move support from DSS-26,34,54 to DSS-26,34,55 in weeks 06 – 09. (3)
- ☺ M01O Map MSPA with MGS Map delete seven 10-hour 70M passes. Add six 4-hour and five 10-hour passes at DSS-25,45,65.
- ☺ MGS Map MSPA with M01O Map delete seven 10-hour 70M passes. Add six 4-hour and five 10-hour passes at DSS-25,45,65.
- ☺ NHPC Cruise/Telemetry change support from 70M to DSS-43



RESOURCE ALLOCATION REVIEW

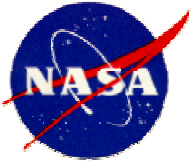
Events, Recommendations and Analyses

2008 – February (Weeks 06 - 09) (continued)



RECOMMENDATIONS

- ☺ SOHO Keyhole change support from DSS-14/27,43/46,63/66 to DSS-43/46,63/66.
- ☺ ULYS Move Nutation support from DSS-14,24,63 to DSS-24,63 and reduce by 2 support per week. Add 2 support per week at DSS-14 only.



RESOURCE ALLOCATION REVIEW

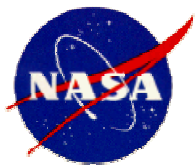
Events, Recommendations and Analyses

2008 – February (Weeks 06 - 09) (continued)

ANALYSES

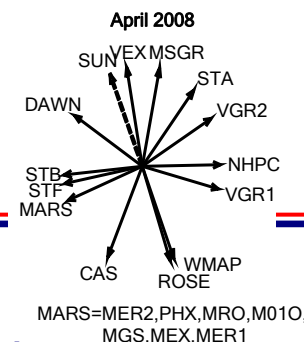
(70M) The projected unsupportable time is moderate to extreme for CLU2, DSS Maintenance, GSSR, M01O, MRO, STF, SOHO and ULYS, due to oversubscription of DSS-14 and DSS-63 from GSSR Asteroid 4450PAN and SN26, SOHO Keyhole, ULYS Nutation, MARS Missions and VGR2.

Contention levels on the 34HEF, 34BWG1, 34BWG2, 34HSB and 26M subnets are workable and should resolve during final schedule preparation and negotiations.



EVENTS

RESOURCE ALLOCATION REVIEW Events, Recommendations and Analyses 2008 – April (Weeks 14 - 17)



DSS-54 approved downtime for X/Ka Band Installation, AZ Track Refurbishment (NIB), AZ Data Gear Replacement (NIB), and Q-band installation (NIB) in weeks 08 -15; DSS-54 proposed 4 weeks downtime extension in weeks 15 – 19

DSS-15 approved downtime for Life Extension in weeks 10 – 19

GBRA Host Country in weeks 14, 16, 17, and 18

Mars Odyssey DDOR in week 16

Mars Reconnaissance Orbiter X/Ka DDOR in week 17

Messenger TCM in week 15

Phoenix DDOR and TCM in weeks 14 – 18

SGP Crust Dyn B-M4 in week 15

SGP Crust Dyn W-M4 in week 18

SOHO HSO in weeks 14 – 18

Voyager 1 MAGROL in week 18

Voyager 2 MAGROL in week 17



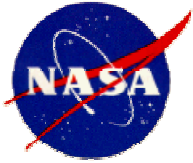
RESOURCE ALLOCATION REVIEW

Events, Recommendations and Analyses

2008 – April (Weeks 14 - 17) (continued)

RECOMMENDATIONS

- ☺ DSS approve proposed DSS-54 downtime extension for X/Ka Band installation in weeks 16 - 17. (2,3)
- ☺ CAS Tour change support at DSS-25,26,34,54,55 to DSS-25,26,34,55 in weeks 17.
- ☺ CLU2 1/2/3/4 SSO change support from DSS-66/54/65/63 to DSS-66/65/63 in week 17.
- ☺ PHX Approach move support from DSS-24,45,54 to DSS-26,45,65 in weeks 14 – 17.
- ☺ STB Prime Science move support from DSS-26,34,54 to DSS-26,34,55 in weeks 14 - 17.



RESOURCE ALLOCATION REVIEW

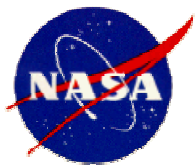
Events, Recommendations and Analyses

2008 – April (Weeks 14 - 17) (continued)

ANALYSES

(34BWG1) DSS-54 antenna is unavailable for use in weeks 14 – 17. Support requiring DSS-54 has been moved to other resources.

Contention levels on the 70M, 34HEF, 34BWG2, 34HSB and 26M subnets are workable and should resolve during final schedule preparation and negotiations.



RESOURCE ALLOCATION REVIEW

Events, Recommendations and Analyses

2008 – May (Weeks 18 - 22)

EVENTS

DSS-54 proposed 4 weeks downtime extension in weeks 15 – 19

DSS-15 approved downtime for Life Extension in weeks 10 – 19

Cassini Tour in weeks 18 – 22

GBRA Host Country in weeks 18, 20, and 22

Odyssey DDOR in week 20

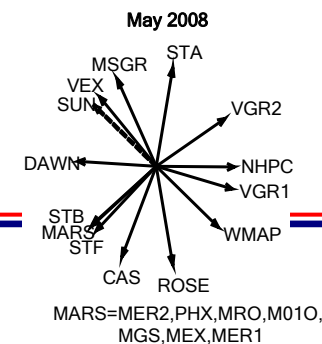
Mars Reconnaissance Orbiter X/ Ka DDOR in week 21

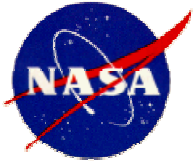
Phoenix DDOR, EDL, and TCM in weeks 18 – 21

SOHO HSO, Keyhole Maneuver in weeks 18 – 22

Voyager 1 MAGROL in week 18

WMAP Maneuver in week 20





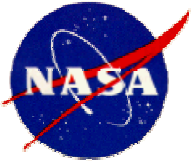
RESOURCE ALLOCATION REVIEW

Events, Recommendations and Analyses

2008 – May (Weeks 18 - 22) (continued)

RECOMMENDATIONS

- ☺ SOHO Keyhole change support from DSS-14/27,43/46,63/66 to DSS-43/46,63/66 and delete one pass in each week 21 and 22. Add three 4-hour passes at the 34BWG1 subnet in weeks 21 and 22 and move support at DSS-15/27,65/66,45/46 to DSS-14/27,65/66,45/46 in week 09. (1)
- ☺ M01O Relay move seven 7-hour and 8-hour supports from DSS-15,43,65 to 34B1,34B2 in weeks 19 – 22. M01O Relay MSPA with MGS Mapping move support from DSS-15,43,65 to DSS-26,45,54 in weeks 19 – 22. (1,2)
- ☺ MGS Mapping MSPA with M01O Relay move support from DSS-15,43,65 to DSS-26,45,55 in weeks 19 – 22. (1,2)



RESOURCE ALLOCATION REVIEW

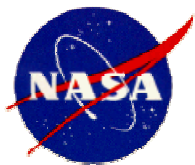
Events, Recommendations and Analyses

2008 – May (Weeks 18 - 22) (continued)

ANALYSES

1. (70M) The projected unsupportable time is moderate to extreme for DSS Maintenance, GSSR, M01O, PHX, SOHO and STF, due to oversubscription of the 70M subnet by PHX Approach and MOI, SOHO Keyhole, MARS Missions and PHX Relay support and VGR2.
2. (34H) The projected unsupportable time is moderate to extreme for CAS, DSS Maintenance, M01O, MEX, MSGR, PHX, SOHO and VEX, due to oversubscription of the subnet by PHX Approach and MOI, SOHO Keyhole, MARS Missions and PHX Relay support and VGR2.

Contention levels on the 34BWG1, 34BWG2, 34HSB and 26M subnets are workable and should resolve during final schedule preparation and negotiations.



RESOURCE ALLOCATION REVIEW

Events, Recommendations and Analyses

2008 – November (Weeks 45 - 48)

EVENTS

DSS-43 approved downtime for Life Extension in weeks 40 – 13; DSS-43 approved downtime for DLM (NIB) in weeks 40 – 43.

DSS-46/66 extended downtime in weeks 40 – 52.

Cassini Tour in weeks 45 – 48

GBRA Host Country in weeks 44 – 48

Kepler launch in week 44

Mars Reconnaissance Orbiter X/Ka-DDOR in week 45

SGP Crust Dyn B-M4 in week 47

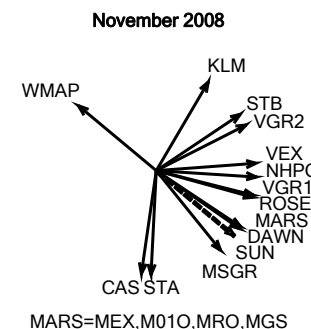
SGP Crust Dyn H-M4 in week 44

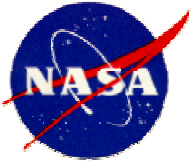
SGP Crust Dyn W-M4 in week 48

SOHO Keyhole Maneuver in weeks 45 – 47

Voyager 1 MAGROL in week 44

Voyager 2 MAGROL in weeks 44 and 45





RESOURCE ALLOCATION REVIEW

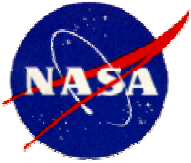
Events, Recommendations and Analyses

2008 – November (Weeks 45 - 48) (continued)

RECOMMENDATIONS

DSS delay decommissioning DSS-46 and DSS-66 antennas through EOEM's of SSMO missions.

- ☺ **M01O Relay support MSPA seven 6-hour supports with MEX Orbital Science at 34HEF subnet.**
- ☺ **MEX Orbital Science support MSPA seven 6-hour supports with M01O Relay at 34HEF subnet.**
- ☺ **SOHO Change Keyhole support from DSS-14/27,45/34,63/65 to DSS-14/27,63/65 in weeks 45 – 47.**
- ☺ **STB move 6 of 7 passes per week from DSS-26,34,54 to DSS-24,25,54 and remaining 1 pass to DSS-34,45.**
- ☺ **KEPL Change commissioning support from DSS-26,34,55 to 34B1,34B2.**
- ☺ **VGR1 D/L delete 3 of 7 passes at DSS-26,25 and delete 3 of 7 passes at DSS-55.**
- ☺ **VGR2 delete 2 of 7 passes at DSS-34,45.**



RESOURCE ALLOCATION REVIEW

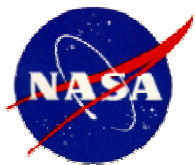
Events, Recommendations and Analyses

2008 – November (Weeks 45 - 48) (continued)

ANALYSES

(34BWG1) The projected unsupportable time is moderate to extreme for DSS Maintenance, KEPL, M01O, MEX, MGS, MRO MSGR, SOHO, STB, VGR, WIND and WMAP, due to oversubscription of the subnet by KEPL Commissioning Continuous support, SOHO Keyhole and MRO Solar Conjunction and other Mars Mission Support compounded by the DSS-43, 46 and 66 downtime.

Contention levels on the 70M, 34HEF, 34BWG2, 34HSB and 26M subnets are workable and should resolve during final schedule preparation and negotiations.



RESOURCE ALLOCATION REVIEW

Events, Recommendations and Analyses

2008 – December (Weeks 49 - 52)

EVENTS

DSS-43 approved downtime for Life Extension in weeks 40 – 13

DSS-46/66 extended downtime in weeks 40 – 52

Cassini Tour in weeks 49 – 52

GBRA Host Country in weeks 49 – 52

Mars Reconnaissance Orbiter X/Ka DDOR in week 52

MSGR TCM in week 51

NHPC Maneuver and Solar Conjunction in weeks 51 and 52

SGP Crust Dyn B-M4 in week 51

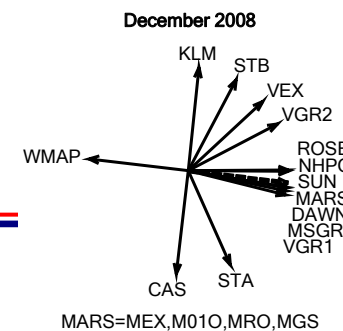
SGP Crust Dyn H-M4 in week 50

SGP Crust Dyn W-M4 in week 51

SOHO TSO in week 50

Voyager 2 MAGROL in week 50

WMAP Maneuver in week 52





RESOURCE ALLOCATION REVIEW

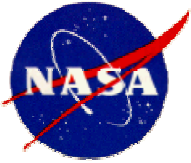
Events, Recommendations and Analyses

2008 – December (Weeks 49 - 52) (continued)

RECOMMENDATIONS

DSS delay decommissioning DSS-46 and DSS-66 antennas through EOEM's of SSMO missions.

- ☺ **MEX Orbital Science MSPA seven 10-hour passes at the DSS-15,25,54,63 antennas with seven 6-hour passes MGS Mapping.**
- ☺ **MGS Mapping MSPA seven 10-hour passes at the DSS-15,25,54,63 antennas with seven passes MEX Orbital Science.**



RESOURCE ALLOCATION REVIEW

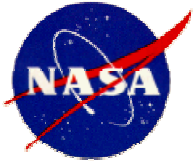
Events, Recommendations and Analyses

2008 – December (Weeks 49 - 52) (continued)

ANALYSES

(34HEF) The projected unsupportable time is moderate to extreme for ACE, DSS Maintenance, MGS, MSGR, SOHO, VGR2 and WIND due to oversubscription of the subnet by Mars Mission Support compounded by the DSS-43, 46 and 66 downtime.

Contention levels on the 70M, 34BWG1, 34BWG2, 34HSB and 26M subnets are workable and should resolve during final schedule preparation and negotiations.

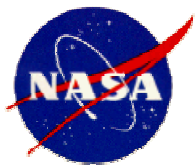


RESOURCE ALLOCATION REVIEW

Events, Recommendations and Analyses



2009 Events, Recommendations and Analyses

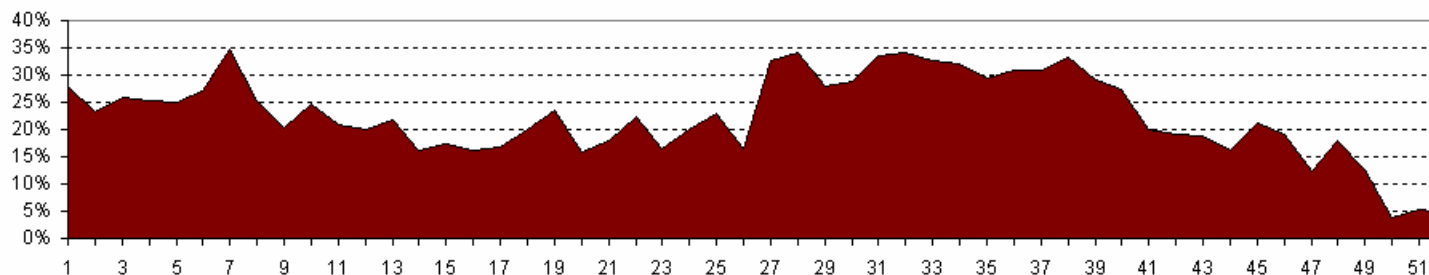


RESOURCE ALLOCATION REVIEW

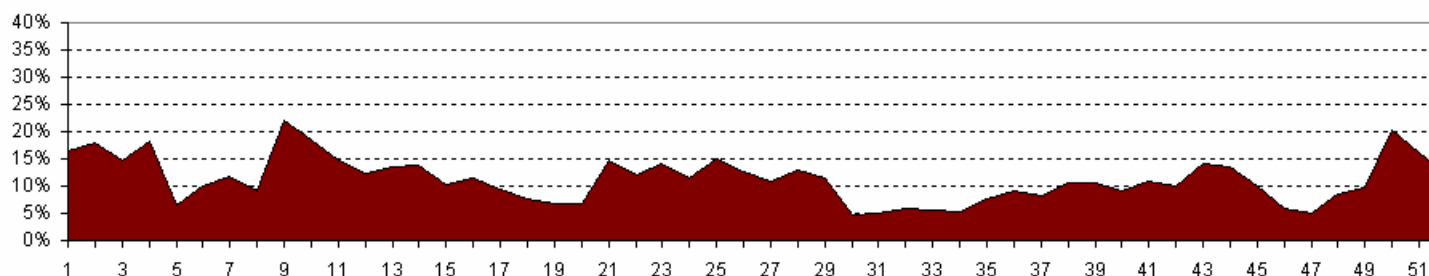
Events, Recommendations and Analyses

2009 Weekly Average User Unsupportable Time

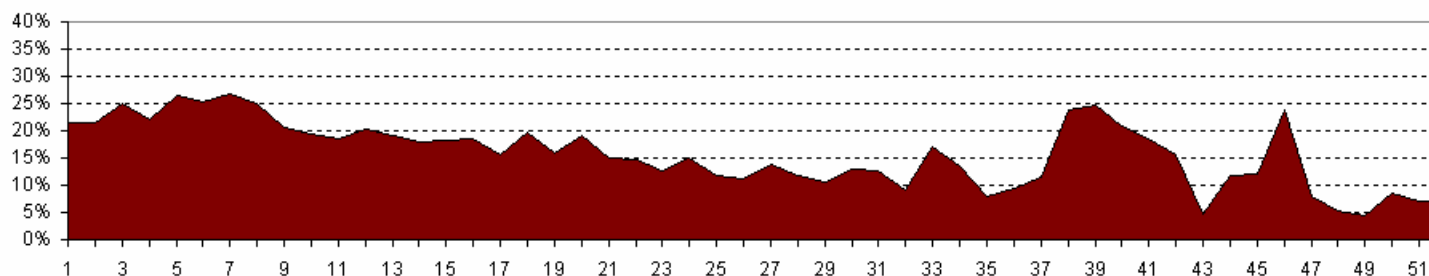
70M

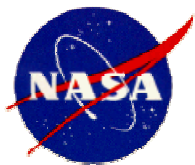


34HEF



34BWG1



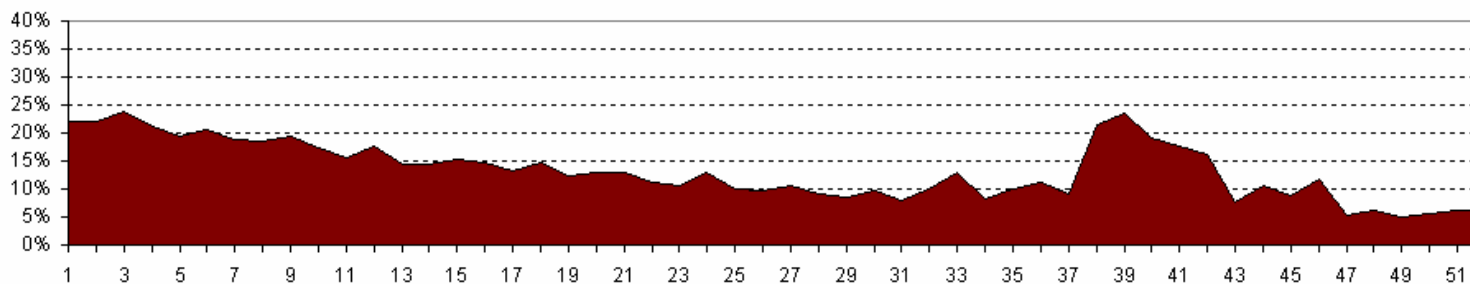


RESOURCE ALLOCATION REVIEW

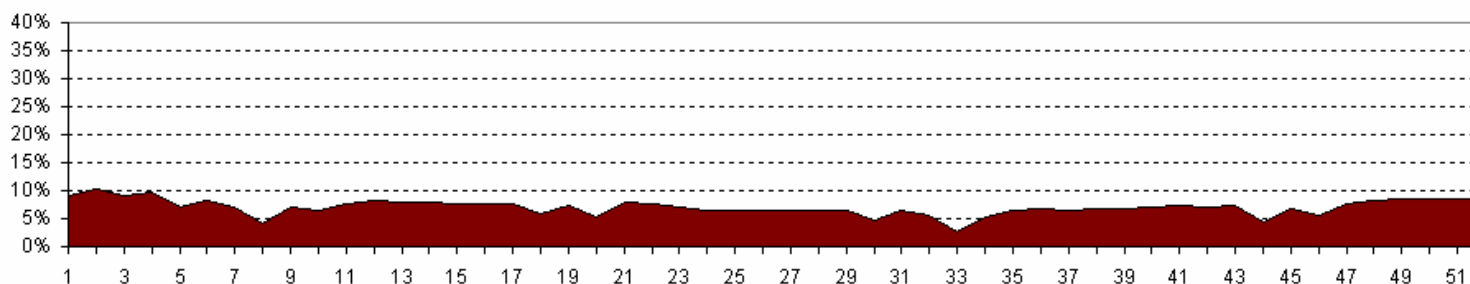
Events, Recommendations and Analyses

2009 Weekly Average User Unsupportable Time

34BWG2



34HSB

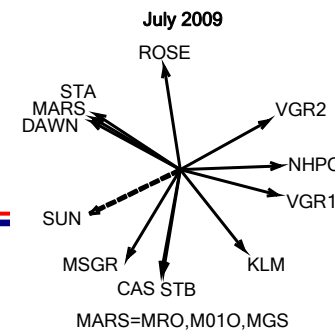




RESOURCE ALLOCATION REVIEW

Events, Recommendations and Analyses

2009 – July (Weeks 27 - 31)



EVENTS

DSS-63 approved downtime for Life Extension in weeks 14 - 39

DSS-46 extended downtime in weeks 01 – 52

DSS-66 extended downtime in weeks 01 – 52

Cassini Tour in weeks 27 - 31

GBRA Host Country in weeks 27 - 30

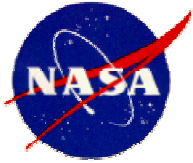
LUNA Launch and LEOP starts in week 31

NHPC Maneuver in weeks 29 – 30

SGP Crust Dyn B-M4, H-M4, W-M4 in weeks 28, 30, 31

SOHO Keyhole in weeks 30 – 31

Wind TCM in week 27



RESOURCE ALLOCATION REVIEW

Events, Recommendations and Analyses

2009 – July (Weeks 27 - 31) (continued)



RECOMMENDATIONS

- ☺ MEX Orbital Science MSPA 7 of 7 passes at DSS-14,15 with MGS Mapping at 34H,34B2.
- ☺ MGS Mapping MSPA 7 of 9-10 passes with MEX Orbital Science at 34H,34B2.



RESOURCE ALLOCATION REVIEW

Events, Recommendations and Analyses

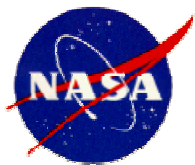
2009 – July (Weeks 27 - 31) (continued)



ANALYSES

1. (70M) The projected unsupportable time is moderate to extreme for DSS Maintenance, M01O and MEX, due to oversubscription of the subnet, particularly DSS-14, by Mars Mission Support compounded by the DSS-63 downtime.

Contention levels on the 34HEF, 34BWG1, 34BWG2, 34HSB and 26M subnets are workable and should resolve during final schedule preparation and negotiations.



RESOURCE ALLOCATION REVIEW

Events, Recommendations and Analyses

2009 – August (Weeks 32 - 35)

EVENTS

DSS-63 approved downtime for Life Extension in weeks 14 - 39

DSS-46 extended downtime in weeks 01 – 52

DSS-66 extended downtime in weeks 01 – 52

Cassini Tour in weeks 32 - 35

GBRA Host Country in weeks 32 - 34

LUNA LEOP in weeks 31 – 35

Mars Reconnaissance Orbiter X/Ka DDOR in week 32

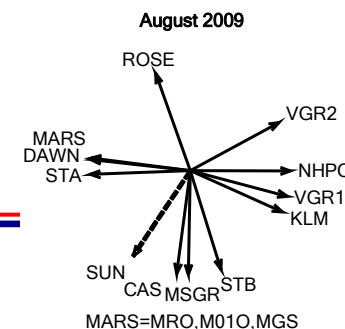
Messenger TCM in week 35

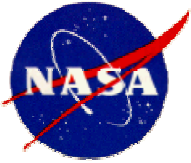
SGP Crust DYN B-M4, H-M4, W-M4 in weeks 33 - 35

SOHO Keyhole and Maneuver in weeks 32 - 34

Voyager 1 MAGROL in week 32

WMAP Maneuver in week 32





RESOURCE ALLOCATION REVIEW

Events, Recommendations and Analyses

2009 – August (Weeks 32 - 35) (continued)

RECOMMENDATIONS

- ☺ MEX Orbital Science MSPA 7 of 7 passes with MGS Mapping at 34H,34B2.
- ☺ MGS Mapping MSPA 7 of 9-10 passes with MEX Orbital Science at 34H,34B2.



RESOURCE ALLOCATION REVIEW

Events, Recommendations and Analyses

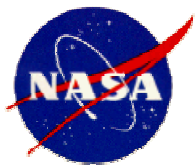
2009 – August (Weeks 32 - 35) (continued)



ANALYSES

1. (70M) The projected unsupportable time is moderate to extreme for DSS Maintenance, M01O Themis, MEX and SOHO Keyhole, due to oversubscription of the subnet by Mars Mission Support and SOHO Keyhole compounded by the DSS-63 downtime.

Contention levels on the 34HEF, 34BWG1, 34BWG2, 34HSB and 26M subnets are workable and should resolve during final schedule preparation and negotiations.



RESOURCE ALLOCATION REVIEW

Events, Recommendations and Analyses

2009 – September (Weeks 36 - 39)

EVENTS

DSS-63 approved downtime for Life Extension in weeks 14 - 39

DSS-46 extended downtime in weeks 01 – 52

DSS-66 extended downtime in weeks 01 – 52

Cassini Tour in weeks 36 - 39

GBRA Host Country in weeks 36 - 39

GSSR GODR in week 38

Messenger TCM in week 39

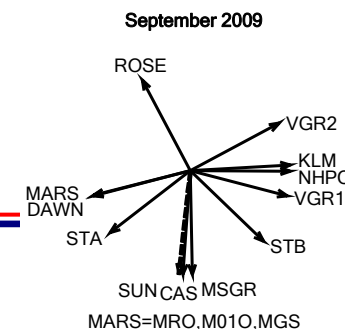
Mars Science Lab Launch Support starts in week 38

New Horizons DDOR in week 39

SGP Crust Dyn B-M4, W-M4 in weeks 36, 38, 39

Voyager 1 MAGROL in weeks 37 – 39

Voyager 2 MAGROL in week 38





RESOURCE ALLOCATION REVIEW

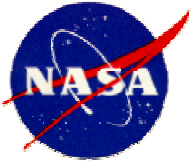
Events, Recommendations and Analyses



2009 – September (Weeks 36 - 39) (continued)

RECOMMENDATIONS

- ☺ MEX Orbital Science MSPA 7 of 7 passes with MGS Mapping at 34H. (1)
- ☺ MGS Mapping MSPA 7 of 9 - 10 passes with MEX Orbital Science at 34H. (1)
- ☺ STA move 6 of 7 passes per week from DSS-26,34,55 to DSS-24,25 and remaining 1 pass to DSS-34,45. (2)



RESOURCE ALLOCATION REVIEW

Events, Recommendations and Analyses

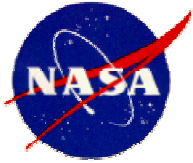


2009 – September (Weeks 36 - 39) (continued)

ANALYSES

1. (70M) The projected unsupportable time is moderate to extreme for DSS Maintenance, M01O and MEX, due to oversubscription of the subnet, particularly DSS-14, by Mars Mission Support compounded by the DSS-63 downtime.
2. (34BWG1) The projected unsupportable time is moderate to extreme for ACE, CAS, DSS Maintenance, MRO, MSL, STA, VGR2 and WIND due to oversubscription of the subnet, particularly DSS-34, by MSL Launch Support and Mars Mission Support compounded by the DSS-63 downtime.

Contention levels on the 34HEF, 34BWG2, 34HSB and 26M subnets are workable and should resolve during final schedule preparation and negotiations.



RESOURCE ALLOCATION REVIEW Supplemental Materials



**Supplemental materials may be found on the
Resource Allocation Planning Service (RAPS) Homepage at:
<http://rapweb.jpl.nasa.gov>**

- ◆ **Ongoing Users Negotiated Requirements
Individual User Loading Profiles**
- ◆ **Resource Allocation Review Information
Supplemental Yearly Information**